The Dissertation Committee for Douglas Charles Garrard Certifies that this is the approved version of the following dissertation:

THE RELATION BETWEEN A STUDENT'S CHOICE OF LIVING ARRANGEMENT AND STUDENT EFFORT, ACHIEVEMENT AND COLLEGE SATISFACTION

Committee:

James P. Duncan, Supervisor

Marilyn C. Kameen

Noel G. Landuyt

William F. Lasher

Laura M. Stapleton

THE RELATION BETWEEN A STUDENT'S CHOICE OF LIVING ARRANGEMENT AND STUDENT EFFORT, ACHIEVEMENT AND COLLEGE SATISFACTION

by

Douglas Charles Garrard, B.S.; M.Ed.

Dissertation

Presented to the Faculty of the Graduate School of

The University of Texas at Austin

in Partial Fulfillment

of the Requirements

for the Degree of

Doctor of Education

The University of Texas at Austin

August 2006

Dedication

To Suzanne, Sam and Nick,

whose love makes all things possible

Acknowledgements

To Suzanne, my wife, for her never-ending love, devotion and support. To Sam and Nick, for the love and joy they have brought to me, and for reminding me of what is important in life with four simple words, “Let’s go play, Dad.”

To my mom and dad, brother and sister, Grandma Mary, Joe and Holly, and all my extended family, for their love and encouragement.

To the many faculty of the University of Texas Higher Educational Administration program, for providing an excellent environment for me to learn and grow.

To my committee, Dr. James Duncan, Dr. Marilyn Kameen, Dr. Noel Landuyt, Dr. William Lasher and Dr. Laura Stapleton, thank you for serving on my committee. Your experience, critiques and suggestions helped guide and shape my study.

To Dr. James Duncan, for his guidance, insight and concern for me as a student throughout my doctoral program.

To Dr. Laura Stapleton, for contributions that shaped the method of my study and for her continued support even after her move to another university across the country.

To friends and colleagues at the Division of Housing and Housing and Food Service and the Division of Student Affairs, past and present, for encouragement and support.

To Ms. Gloria Allen, for being a wonderful friend and exceptional colleague.

To Mr. Shannon Janes, friend and mentor, for his words of wisdom and good humor.

To Ms. Jan Schultze and Dr. Sherra Tyson, friends and colleagues throughout the process.

To the Center for Postsecondary Research and Planning at Indiana University for its support of my study.

The journey to complete my doctorate has encompassed almost a decade. In retrospect, I now have a greater understanding of C. Robert Pace’s notion of “quality of effort”.

THE RELATION BETWEEN A STUDENT'S CHOICE OF LIVING ARRANGEMENT AND STUDENT EFFORT, ACHIEVEMENT AND COLLEGE SATISFACTION

Publication No._____

Douglas Charles Garrard, Ed.D

The University of Texas at Austin, 2006

Supervisor: James P. Duncan

Calls for reform in higher education that focus on institutional characteristics which impede effective teaching and learning, such as a fragmented and specialized curriculum, a lack of clarity of goals, and the need to integrate the in- and out-of-class experience, have been well documented in the literature. Under the premise that learning can be best realized with purposeful and connected in- and out-of-class learning environments, living-learning communities are a popular option on many of our nation's campuses. The benefits of conventional residence hall living have been well established in the literature. A growing body of research supports that living-learning communities offer the promise of a wholly integrated campus environment, suggesting academic achievement can be influenced by an environment that mutually supports academic, interpersonal and extracurricular activities.

This study used quantitative and qualitative methods to examine in depth the association between a student's place of residence and various learning outcomes. Data for this study included self-reported levels of effort, achievement and satisfaction as measured by the College Student Experiences Questionnaire, institutional data on college grade point average and enrollment, and qualitative interviews. This study focused on "within-college" effects, or the relationship between student experiences at the same institution and student outcomes.

This study found that place of residence had no relationship with a student's level of satisfaction or self-reported academic and social gains. Place of residence had a limited association with student scores on personal and interpersonal level of effort scales. Active learning, student-faculty interaction and cooperation among students, referred to as "good educational practices," were found to be significant predictors of academic and social gains. Additionally, participation in the living-learning community was also found to be associated with higher odds of being retained in college. With limited exceptions, student background characteristics did not have a significant affiliation with student success. This finding is consistent with C. Robert Pace's (1984) notion that what a student does at college is more important than what they did before they entered college. Overall, the results suggest that the university is providing an environment that promotes student success regardless of place of residence.

Table of Contents

List of Tables

List of Figures

CHAPTER I

Introduction to the Study

Residential learning communities, commonly referred to as living-learning communities, are a popular option on many of our nation's campuses. While the benefits of conventional residence hall living have been widely supported in the literature (Chickering, 1969 & 1974; Astin, 1977; Upcraft and Pilato, 1982; Pascarella, 1985a; Schroeder, Mable & Associates, 1994), it is believed that living-learning communities offer the promise of a wholly integrated campus environment. Kuh (1996) refers to this as a "seamless"[1] learning environment, one where the academic (in-class) and out-of-classroom activities are fully integrated and mutually supporting to promote higher levels of student learning.

The concept of learning communities is not new. The roots of learning communities can be traced to early twentieth century programs such as Yale's' residential colleges, Princeton's "Quadrangle Plan" and Harvard's House plan. However, it is the contributions of Meiklejohn and Dewey in the 1920's and Trussman's "Berkeley Experiment" in the 1960's that provided a model for future educational reforms. Gabelnick, MacGregor, Matthews and Smith (1990) consider Meiklejohn a father to the learning community movement for his insights about the need to reorganize the curriculum (p. 11). Meiklejohn's response to the increased specialization and

1 The Student Learning Imperative, published by the American College Personnel Association, 1994, indicates that a "seamless" learning environment attempts to overcome perceived unconnected and disjointed experiences by bridging organizational boundaries and forging collaborative partnerships between academia and student affairs to enhance student learning.

fragmentation found on college campuses was the introduction in 1927 of the short-lived "Experimental College Curriculum" at the University of Wisconsin.

Trussman, a student of Meiklejohn's, also focused on reforms in the undergraduate curriculum, proposing that the lower-division curriculum be treated as a program rather than a collection of courses. Unlike Meiklejohn and Trussman who promoted structural changes, Dewey's work promoted a closer relationship between students and faculty based on the concept of shared inquiry. "Dewey believed that education needed to be more purposeful and far less accidental in terms of engaging the learner" (Gablenick et al., 1990, p. 16).

Grounded in pedagogical theory and research on collaborative learning, learning communities are re-emerging as a means to realign the value and purpose of higher education. Zhao and Kuh (2004) indicate that the contemporary learning community is fashioned after the "experimental college" of the 1920's and variations that emerged in the 1960's to humanize the learning environment. "The vision of the collegiate learning community refers to an idealized version of the campus past, where students and faculty shared a close and sustained fellowship, where day-to-day contacts reinforced previous classroom learning, where curriculum was organized around common purposes, and the small scale of the institution promoted active learning, discussion and individuality" (Gablenick et al., 1990, p. 9).

Calls for reform in higher education have helped draw attention to the potential benefits of living-learning communities. Since the 1980's there has been a renewed interest and emphasis on the quality of undergraduate student learning in American institutions of higher education. The undergraduate curriculum and attention to the undergraduate learning experience has been the subject of numerous reports that call for reforms in higher education (National Commission on Excellence in Education, 1983;

Study Group on the Conditions of Excellence in American Higher Education, 1984; Boyer, 1987; and the Wingspread Report, 1993). “These reports highlight particular concerns regarding the fragmented and specialized curriculum, the lack of clarity about goals and purposes, and the need to integrate the out-of-class experience with the educational mission of the institution” (Schroeder and Mable, 1994, p. 3). Similarly, Gablenick et al. (1990) indicate that the reforms have focused on promoting coherence, community and a sense of common purpose.

Critical to the educational experience is how the quality and excellence of teaching and learning activities are defined. Astin (1985) challenges traditional views that equate institutional excellence with institutional reputation and resources (people, physical assets and monetary assets). Astin writes that excellence is traditionally measured in terms of inputs such as endowments, library holdings, the number of faculty with terminal degrees, the number of academic buildings, the number of national merit scholars, test scores, and so on. While various publications, educators and the public at large have valued these institutional characteristics, traditional definitions of excellence fail to accurately measure student learning outcomes. Astin indicates that a symbiotic relationship exists between institutions with resources and a reputation for excellence, as excellence attracts resources and institutions with resources are viewed as being excellent.

Pace (1979) advanced the notion that the issue of excellence is not about having a reputation for excellence or having an abundance of resources, rather the issue is how effectively students maximize available resources. Similarly, Astin (1985) advocates a talent development model that defines excellence in terms of an institution’s “ability to develop the talent of its faculty and students to maximize potential” (p. 16). Both Pace and Astin, along with numerous other researchers have devoted efforts towards

identifying educational practices that promote higher levels of student engagement in the learning process.

These calls for reform have shifted the debate about the quality of the undergraduate education to student learning outcomes. In response to the calls for reform, faculty members, academic departments and student affairs administrators began breaking through the invisible walls that often divided the campus to reexamine and retool many of the notions about the learning process. Increasingly, educators are becoming aware that learning can be best realized within purposeful and connected learning environments.

Boyer (1987) writes that life outside the classroom is an important but overlooked aspect of the college experience. He maintains that educational processes that educate and allow students to define values and become critical thinkers, must be a priority of the institution. This includes environments that promote intentional and integrated learning opportunities, opportunities for faculty and student interactions, and opportunities for students to synthesize and apply knowledge learned in the classroom to a variety of other settings. Residential learning communities provide a promising vehicle to promote such an environment.

In the early 1980's the University of Oregon and University of Washington were among the first universities to develop learning communities geared specifically toward freshman to address the calls for reform. Gardner (1986) indicates that initial efforts were limited to reforms in college curricula, resulting in curricula with course titles such as "University 101." The scope of reforms eventually broadened to include the residential environment as an important component in student learning. In 1994, the Association of College and University Housing Officers-International (ACUHO-I)[2]

[2] Throughout the document references will be made to various professional associations within student affairs such as the Association of College and University Housing Officers-International (ACUHO-I), the

outlined the profession's commitment to supporting learning initiatives in a document titled "The Resident Nexus: A Focus on Student Learning." The document underscores the important role that residence halls have in meeting an institution's educational mission. Institutions also continue to meet the challenges and demands of a changing higher education system by re-emphasizing the out-of-class experience as well as the in-class-experience. As a result established or newly formed living-learning communities of many different arrangements are now commonplace on campuses across the United States. As an example, in 1999 the University of Oregon expanded its learning community concept that originated in 1982 to include a residential component.

Gabelnick et al. (1990) define a learning community as "any one of a variety of curricular structures that link together several existing courses – or actually restructure the curricular material entirely – so that students have opportunities for deeper understanding and integration of the material they are learning" (p.19) They write that a variety of models exist, but that all efforts represent attempts to reorganize and redirect students' academic experiences for greater intellectual and social coherence and involvement. Notably, Gablenick et al. (1990) point out that residential learning communities signify a joint undertaking between academic and student affairs, creating an environment for the in-class and out-of-class experiences to intertwine and connect. The different types of learning communities that exist in university residential settings, as defined by James and Klippenstein (2002), are summarized below:[3]

Residential Colleges – Modeled after the Colleges of Oxford and Cambridge, residential colleges offer degree granting programs and academic support services within

National Association of Student Personnel Administrators (NASPA) and The American College Personnel Association (ACPA).

[3] This study involves a residential-learning community. For the purpose of this study, learning community will be broadly defined and referred to as a "living-learning community."

the residential facility. Faculty and students live and work together within the residence hall.

Living-Learning Centers – Specialized residential programs which have direct connections and strong partnerships with a specific academic program. Typically classes are taught in the building, faculty maintain office hours within the residence hall, and programming efforts support an academic theme. Examples include honors programs, and special programs for students in math, science and engineering.

Theme Housing – Residential programs that offer opportunities for students with special interests to live and work together. Programs include wellness halls, leadership halls, international halls and substance free housing.

Academic Residential Programs – Residential programs that provide academic support services and academic programs within the residence hall environment. Academic residential programs rely on strong partnerships with academic and student affairs, and provide services such as advising, career planning, and tutoring within the residence hall.

The First Year Experience – Specialized housing configurations that are geared toward fully integrating freshmen into the campus community. Strong partnerships between academic and student affairs provide institutionally coordinated activities that aid in the transition process.

Residential Learning Communities – Residential programs that create opportunities for clusters of students to live and attend classes together. Residential learning communities include specialized course assignments, student groups and faculty involvement within the living-group.

Schroeder and Mable (1994) indicate that Terenzini, Pascarella and Blimling have put to rest -- through intensive examination of over two decades of books, book chapters,

journals, monographs, technical reports, research reports and conference papers-- the myth that students' academic and non-academic experiences are separate and unrelated areas of influence on learning. "The greatest impact [on student learning] may stem from the students' total level of campus engagement, particularly when academic, interpersonal, and extracurricular involvements are mutually supporting and relevant to a particular educational outcome" (Pascarella, Terenzini and Blimling, 1994, p. 32).

STATEMENT OF PROBLEM

This research study proposes to identify how a student's place of residence while attending college contributes to that student's level of effort on various college activities and academic and social gains. The study compared three groups of students: those students who resided in an on campus living-learning community, those students who resided in a conventional residence hall, and those who commuted to campus. Self-reported levels of effort and gains were measured by the College Student Experiences Questionnaire[4] as further described in chapter three of this dissertation. The study also evaluated whether "good" educational practices contributed to self-reported academic and social gains. Additionally, the study evaluated how a student's place of residence contributed to grade point average and retention. The following research questions[5] were addressed in this study:

[4] The College Student Experiences Questionnaire (CSEQ) assesses the quality of effort students expend in various college activities presumed to contribute to learning and development. Data from the instrument is useful in helping institutions evaluate student behaviors, and aspects of the college environment that are associated with student learning.

[5] Research questions one, two and three adapted from "Educating the Best and the Brightest: Collegiate Honors Programs and the Intellectual, Social and Psychological Development of Student, a dissertation by Frank Shushok, Jr., 2002

Research Question 1

Do students in the three residential groups have differing perceptions about the college environment after one academic year?

Research Question 2

Do students in the three residential groups exhibit differing levels of engagement with campus resources and activities as measured on a variety of college activity and experience scales after one year?

Research Question 3

Do students in the three residential groups evaluate their achievements on self-reported academic and social gain scales differently after one year?

Research Question 4

What types of educational practices are associated with students' self-reported academic and social gains?

Research Question 5

Do students who participate in the living-learning community exhibit higher grade point averages?

Research Question 6

Are students who participate in the living-learning community retained at higher rates than non-participants?

SIGNIFICANCE OF STUDY

Programs and practices that engage the student more fully into the educational process have been found to contribute to students' learning. Institutions commit

resources in the form of program budgets, faculty, staff and student-mentors, curriculum changes, restructured advising and registration processes and specially designed facilities in attempts to enhance the campus learning environment. Fully engaging the student into the educational experience has many practical benefits, including increased learning outcomes, increased retention and increased satisfaction with the college experience. Living-learning communities are becoming increasingly more popular and are being relied upon to engage students and enhance the undergraduate experience.

This study evaluates the relationship between three types of living arrangements and student experiences within the educational process. 39The site institution currently has plans to triple its residential community over the next decade. If positive outcomes are associated with the residential learning community, the institution could be better served by expanding the program. Conversely, if the program is found to have little positive impact, the information will be beneficial in evaluating current programs, supporting traditional practices that may be effective, and forming new approaches.

DELIMITATIONS OF THE STUDY

The study is limited to within-college effects, how different experiences at the same institution might influence student outcomes. The small sample size of this study limits the power of statistical tests. Caution must be exercised in interpreting the results and applying the findings to other institutions. The timeframe of the study examined levels of effort and achievement during the first year of college and does not track developmental and learning outcomes which occur during the entire undergraduate experience. The study was framed as quasi-experimental research, not true experimental research, and thus the study included controls for pre-enrollment characteristics. The design further limits generalizing the findings to other institutions.

SITE

The study site was a Carnegie classification "Master's Colleges and Universities I," a private Catholic institution located in the Southwestern United States. Universities in this classification typically offer a wide range of baccalaureate programs, and are committed to graduate education through the master's degree (Carnegie Foundation, 2000). Core values for the site institution included goodness, discipline, knowledge and community. The core values are exemplified in the mission statement for the institution:

> We are committed to the Catholic intellectual tradition and the dialogue between faith and reason. By pursuing excellence in teaching, scholarship, and service, we embody and instill in our students the core values of our founders, the Basilian Fathers: goodness, discipline, and knowledge. We foster engagement in a diverse, collaborative community. As a comprehensive university grounded in the liberal arts, we educate students to think critically, communicate effectively, succeed professionally, and lead ethically (Fact Book, 2004-2005).

Enrollment for the fall 2004 semester was 3,648. Of these, 3,044 of the students were campus-based undergraduate and graduate students. The fall 2004 campus based enrollment consisted of 1,746 undergraduate students. Freshman enrollment for Fall 2004 was 303. During the fall 2004 semester the population consisted of 51.5% White, 28.1% Hispanic, 11.6% Asian/Pacific Islander, 8.3% Black and .5% American Indian students. The student body had representatives from 32 states and 50 foreign countries; however, 90% of the student population came from the State of Texas

At the time of this study, the curriculum consisted of 30 undergraduate majors, 10 master's programs, one doctoral program and three pre-professional programs. The most popular majors for entering freshman were Business Administration, Biology/Pre-Medicine, and Psychology. The student to faculty ratio was reported as 14:1, and the

average class size was reported as 19.0 students. The average SAT composite score for entering freshman class of Fall 2004 was 1152, placing them among the top 29% of test-takers nationally. The entering freshman class profile included 24% of the students ranked in the top 10% of their high school graduating class. Sixty-nine percent of the Fall 2004 freshman class also returned for their sophomore year. The 6-year graduation rate reported for the 1998 cohort was 50%. (Fact Book, 2004-2005)

On campus residence halls provided housing for approximately 360 students in a conventional residence hall setting. An additional 36 students resided in on campus apartments and 26 students resided in the living-learning community. Thirty-nine percent of the entering freshman class lived on campus during the 2004/05 academic year. The living-learning community "…strives to create a living and learning environment dedicated to discovery and dissemination of truth, aesthetic sensitivity, a passion for justice and compassion for all" (Fact Book, 2004-2005). The program allowed students to integrate knowledge from coursework with service projects and community activities.

Importantly, the living-learning community was consistent with strategic initiatives being undertaken by the institution. Two of the four strategic initiatives for the institution were to: "Strengthen the academic excellence of our faculty and students and the quality of education; and, "Build a more engaged campus community as we increase undergraduate enrollment" (Fact Book, 2004-2005). Additionally, the campus was engaged in a master planning process to re-design the campus and also had plans to significantly increase on campus housing over the next decade.

SUMMARY

This chapter provided an introduction to the study including an overview of the calls for reform that have led to the emphasis on creating "seamless" learning environments and the need to integrate in-class and out-of-class experiences. Living-

learning communities were introduced as a means to connect the in-class and out-of-class experience and more fully engage a student in the learning process. The rationale for undertaking this study and the research questions examined were also presented. The following chapter will review historical events that have shaped modern-day colleges and universities, and also emphasize relevant literature in support of this study.

CHAPTER II

Review of the Literature

Developing the "whole student"[6] holds a prominent place in the American higher education system. Consequently, Student Affairs is ever-evolving to meet the changing needs of students. Traditionally the out-of-class experience has been the domain of student affairs practitioners. However, calls for reform in higher education have now rekindled academia's interest in this domain. Living-learning communities are one example of the collaborative efforts between student affairs and academia.

This chapter will provide a summary of relevant literature that supports this study. The historical development of residence halls will be highlighted, emphasizing major events that have shaped the mission of on campus housing and developments that led to the chasm that exists between student affairs and academia on many campuses. The beneficial impacts of on campus residency will be reviewed with particular emphasis on how living on campus contributes to the learning process. Living-learning communities will also be discussed in the context of enhancing the overall learning process and as a means of addressing calls for reform in higher education. Environment theories, student involvement and quality of effort will also be discussed as they relate to student outcomes.

---

[6] The roots of developing the whole person can be traced to ancient philosophy that was concerned with harmonizing the mind, body and soul. The term, "developing the whole student" is found in early student personnel literature such as the American Council on Education's, Student Personnel Point of View, 1937, " to consider the student as a whole" (p. 39) and The Student Personnel Point of View, 1949, "the development of students as whole persons" (NASPA, 1989, p. 17). Throughout the literature different phrases have been used to connote the same intent, such as a 1968 statement by the Committee on Higher Education that called for "facilitating the development of the total personality" (p.6), or referrals to an holistic or humanistic approach to student development. (Saddlemire, 1980)

HISTORICAL OVERVIEW

The system of residence halls in the United States has evolved considerably since its early European origins. While the basic necessity of providing food and shelter has remained the same, the philosophies surrounding the provision of these services and the mission of modern day on campus residential systems have changed significantly.

European history played a vital role in the evolution of modern day American institutions of higher education. The emphasis on research and the system of boarding houses is reflective of the German influence on higher education in the United States. Although the French initiated the college system, the most significant contributions to the American system can be traced back to the English attempts to educate gentlemen, and the German emphasis on research. Early European medieval universities had no interest in over-seeing the well being of the college student outside of the classroom. By necessity early medieval students organized as a means of self-protection and as a means to obtain legal protection. The more serious students organized themselves into hospicums (France), nations and socii (Italy), colleges (England) and bursen (Germany), living communities overseen by a master or principal.

After the colonization of America, came the founding of many universities. The early colleges were intent on increasing knowledge and developing students with strong religious and moral values. Fenske (1980) indicates that the functions of the college were performed by trustees, administrators and faculty "under the pervasive impact of Christian piety" (p.5). Although the early colleges adapted their system from Oxford and Cambridge, attempts to duplicate the English residential colleges were not successful. Unlike their English counterparts, the colonial colleges were poor and heavily reliant upon church support. This led to sparse living arrangements, poor board, and the inability to organize autonomous living units similar to the English system, which had

evolved over many centuries. Additionally, the rigid structure that awaited early colonial students was almost totally opposite the English system. The early colonial colleges exercised strong control over their students. The strict daily routine coupled with a rigid curriculum left little time for pursuit of personal interests or release of pent-up energy. The early American system required tutors to reside in the halls and issue punishment to students who disobeyed the rules. Upcraft and Pilato (1982) write that the dormitory environment made it possible for faculty to exercise supervision and parental concern over the young students. Unfortunately it was common for the students to consider the faculty as an enemy.

With the exception of Yale, comparisons to the English system of residential colleges were all but gone by the nineteenth century. Shay (1964) writes that during this period the college residential pattern was as static as the traditional curriculum. Discipline of the mind, in both the academic and social sense, was the norm. American tutors were still charged with overseeing the disciplining of students. Enhancing the residential environment through positive student-faculty relationships was not a priority. Strict control, discipline, and a lack of emphasis on intellectual stimulation outside of the classroom characterized the American system of higher education.

The nineteenth century was a period of significant events that greatly affected the status of collegiate life. Rudolph (1962) writes that residence halls were adversely affected by commonly held perceptions; mainly, that residence halls were viewed as places that "facilitated rebellion" (p. 99). The German ideology with its distinct devotion to research and independent study and disregard for students outside of the classroom became an increasing factor at American institutions. Cowley (1949) refers to this as "impersonalistic intellectualism" and attributes the shift in ideology to German trained American-faculty bringing German philosophies and methods back to the United States

for implementation (p. 19). Enamored of the German philosophy, University of Michigan President Henry Tappen converted the one dormitory on campus into classroom and laboratory space. Tappen was not alone in his view as more universities chose academic pursuits over collegiate life when allocating scarce campus resources. President Wayland of Brown University, President Barnard of Columbia University and President Elliot of Harvard were all outspoken critics of residence halls. Elliot opposed an emphasis on community development, believing that student relationships could best be developed through devotion to common intellectual pursuits. Smith (1994) asserts that Elliot's idea was the antithesis of the collegiate model.

The post Civil War era marked a period of significant change for both society and America's institutions of higher education. Cowley (1949) notes the Land Grant College Act of 1862, along with other important pieces of legislation, led to the creation of secular educational agencies and helped to establish public higher education on a large scale. He adds that during the same period a number of universities arose independent of both organized religion and government. Furthering the separation between church and state, Fenske (1980) writes that "the composition of the boards of trustees changed from predominantly clergy to layman; administrators ceased to be drawn primarily from among the clergy; and students became more concerned with higher education as a means to worldly advancement than as a means to spiritual salvation" (p. 6).

After the Civil War, a wave of individualism and entrepreneurial spirit swept the country. These changes in society spurred a debate over the core curriculum, as it was believed that the core curriculum must be of a practical nature and responsive to individual needs. The free-elective curriculum was born to encourage individual success and to capture the practical nature of learning. The free-elective system assumed an individual was capable of choosing courses that best suited one's interests. In his 1869

inaugural speech, Harvard President Charles Eliot addressed the curricular debate in the following manner: "…Harvard will recognize no real antagonism between literature and science, nor consent to alternatives like mathematics or classics, science or metaphysics; instead, Harvard will have them all" (Kaplan, 1982, p. 4).

Perhaps the greatest change was the role of faculty. As American universities became more secular, Fenske (1980) states that administrative control of universities became the domain of the president, producing "an era of powerful and paternalistic presidents who dominated institutions until the twentieth century" (p. 14). Excluded from the policy-making structure of the institution, Fenske (1980) adds that faculty gained control over their own activities, leading to uncoordinated decisions being made within the academic departments and to the creation of a reward system tied to the faculty member's research efforts. "Faculty attitudes towards students also became increasingly ambivalent as the faculty member's role changed historically from partner in paternalism to individual entrepreneur" (Fenske, 1980, p. 15). This trend helped to further divide the in-class and out-of-class environments.

Although the dormitory movement was severely hampered by the events of the 19th century, it was not defeated. Yale's preservation of the residential college in the 19th century had a significant impact on William Rainey Harper, a Yale Professor. In 1893, as president of the University of Chicago, Harper erected four new dormitories. In 1900, Harper erected seven more dormitories. The erection of new dormitories sent a strong message to other institutions. Princeton soon followed with construction of a graduate dormitory in 1901. Concerned over collegial values, Princeton President, Woodrow Wilson, proposed the "Quadrangle Plan" for residential living in 1907. While unsuccessful, the plan to integrate academics and residential life was influential in

changing attitudes. These early attempts were followed by the "Harvard Plan" in 1927, a plan that combined academics and residential elements within individual houses.

The early to mid-1900's also brought about a proliferation of new philosophies regarding student development. "Although the rudiments of organized orientation courses can be identified as early as 1888, the rapid growth of such courses followed World War I" (Dwyer, 1989, p. 36-37). It was during this period that the emphasis on developing the "whole student" originated. The commitment to development of the whole student can be found in the American Council on Education's, 1937 philosophy of student personnel services:

> Assisting the student to reach his maximum effectiveness, through clarification of purposes, improvement of study methods, speech habits, personal appearance, manners, etc., and through progression in religious, emotional, and social development, and other nonacademic personal and group relationships (NASPA, 1989, p.41).

Professional and para-professional staff were hired in increasing numbers to assist students with the transition to college. Developmental and cognitive theories were also created to explain the transformation process during the formative college years. By the 1950's, residence halls were regarded as integral to developing the whole student as evident in the following passage:

> Because a college graduate is expected to know a great deal more than he learns in the classrooms and laboratories, we consider our residence halls obligated to augment in every way possible the individual student's educational experience (Dammen, 1949, p. 254).

Still, the out-of-class experience was largely regarded as separate from the academic process. Blimling (1998) writes that residential colleges developed during the

early part of the century were abolished due to forces that separated the out-of-class learning from the in-class learning experience. These forces included adoption of the German educational model, development of elective curricula and increased compartmentalization of universities. As Riker (1965) explains, "The root of the problem is fundamentally the time-honored but unwarranted assumption that learning is a product of just the classroom, occurring solely as the result of action and reaction among the teacher, the student, and their subject" (p. 2).

Riker (1965) envisioned a number of concepts which would become quite prominent during the next 20 years. He wrote, "Housing units of the future will be designed as means for organizing students at large and small institutions into comprehensible living communities…" Riker further stated, "Student living communities will be encouraged as educational aids because of their motivational qualities that develop when students live and work together in a team approach to learning." Riker added that faculty members will make use of these communities to increase their teaching effectiveness. "Student housing will be used to focus student energy on learning", creating opportunities to teach undergraduate students where they live; and, "group living will be identified as a part of the curriculum and used in teaching human behavior, development and relationships" (pp. 4-5). Over 40 years later, Riker's vision continues to have value.

During the 1960's and 1970's higher education experienced a period of significant growth and change, bringing new types of students to the college campus. Burgeoning enrollments led to the construction of new residence halls, many of which were high-rise facilities. The high-rise residence halls added unique challenges to developing community among the students. Student activism and a general distrust of authority were common among the student body. Upcraft and Pilato (1982) wrote that

the concept of *in loco parentis* was also abandoned, "…and rules and regulations were replaced by programs, services and activities that promoted student development" (p. 4). Zeller (2003) indicates that by the mid-1970's a bifurcated campus had clearly emerged with faculty overseeing the cognitive and student affairs overseeing the affective aspects of student life. Higher education also experienced a renewed effort to combine the out-of-class and in-class learning experience. "During this era a number of different housing programs developed: living and learning centers, honors residence halls, homogeneous assignment of students by academic major, and degree-granting colleges integrated with residential programs" (Blimling, 1998, p. 39).

Winston and Anchors (1993) report that the term "student development" began to take on additional meaning and became somewhat of a movement itself, during the late 1960's and early 1970's. Student development consisted of utilizing cognitive, psychosocial and moral development theories as a guide to design educational programs or intervene with a student in need of assistance. Winston and Anchors (1993) indicate that the concept of student development was broadened and refined, aided by theories that helped explain the development of young adults, such as Chickering's Seven Vectors of Development (1969), Kohlberg's psychosocial development, and Perry's intellectual development (1970). They add that the works of Lewin, Pervin, Barker, Stern, Holland and Moos helped to explain the social and physical environments that existed on campus (pp. 27-29). Indexes such as College and University Environment Scales (Pace, 1969), the University Residence Environment Scale (Moos & Gerst, 1974) and the College Student Experiences Questionnaire (Pace, 1979) were also developed to better explain the college environment, and the interactions of students within these environments.

Additionally, research by Chickering (1974) and Astin (1973, 1984) provided quantifiable evidence that supported the educational benefits of living on campus over

living off campus. These developmental theories, environmental models and research efforts would guide student affairs practices and lay a foundation for further research developments through the end of the 20th century.

IMPACT OF RESIDENTIAL LIVING

The benefits of living in a residence hall versus living off campus are well documented in the research. History also documents that the out-of-classroom experience has not always been emphasized, and at times, outright ignored. Today most residential programs have evolved into a model which supports the educational mission of the institution. Schmidt and Holtgrieve (1997) cite the development of a more tolerant, intellectual and independent student with strong leadership abilities as a primary goal of residence life programs. Residence halls have played an active role in promoting and enhancing the out-of-classroom experience under the premise that participating in such activities is an integral part of a student's growth.

In a study involving over 169,000 students, Chickering (1974) concluded that even when differences in student background are taken into account, students who live in on campus residence halls have advantages that carry with them throughout their four years. Specifically, he reported that residence hall students are more fully involved in academic, extracurricular and social activities, earn higher grade point averages (GPA), and are overall more satisfied with the college experience than their off campus counterparts.

Upcraft and Pilato (1982) provide a comprehensive summary of the evidence supporting the notion that residence hall students generally do better than their counterparts who live elsewhere. Studies cited by Upcraft and Pilato indicate that residence hall students:

1) Are more satisfied with their living environment. (Selby & Weston, 1978)

2) Are more satisfied with their college experience. (Astin, 1973, 1977; Rich & Jolicoeur, 1978; Selby and Watson, 1978; Chickering, 1974)

3) Earn higher grades, even when differences in prior achievement are taken into account. (Astin, 1973, 1977; Feldman & Newcomb, 1969; Chickering, 1974; Upcraft, Peterson & Moore, 1981)

4) Are less likely to drop out. (Chickering, 1974; Astin, 1973, 1977; Hall & Berger, 1966; Feldman & Newcomb, 1969; Upcraft, Peterson & Moore, 1981)

5) Have more contacts with faculty. (Astin, 1973, 1977; Rich & Jolicoeur, 1978; Selby & Watson, 1978; Chickering, 1974)

6) Have more contacts with other students and a more satisfied social life. (Astin, 1973, 1977)

7) Participate more in student and recreational activities. (Albrow, 1966; Chickering, 1974; Astin, 1977; Foster, Sedlacek, & Hardwick, 1977)

8) Have fewer emotional problems and greater self-esteem. (Sauber, 1972; Lundegren & Schwab, 1979)

9) Have higher educational aspirations. (Albrow, 1966; Astin,1973; Moos & Lee, 1979)

10) Report less conflict with parents. (Lundegren & Schwab, 1979)

11) Experience greater changes in values. (Nelson, 1971)

12) Have greater artistic interests. (Astin, 1977)

Summarizing research which addresses the impact of residential environments on academic achievement, Pascarella (1985b) reported that high aptitude students benefited from living with or in close proximity to other high aptitude students in residential settings that exhibited a strong environmental press for study and academic activities.

Academic achievement was positively influenced in this type of environment. Of a more uncertain nature, Pascarella (1985b) reported that homogeneous grouping in residential units by personality or academic major had mixed results with regards to academic achievement.

LIVING-LEARNING COMMUNITIES

A valid question then is what are the benefits of a living-learning community given the benefits of conventional residence hall living? Pascarella and Terenzini (1991) indicate that residential environments within the same institution can vary, concluding that some environments may be more beneficial in promoting interactions and intellectual growth than others. Living-learning communities are one example of such varied residential environments.

Henry and Schein (1998) state that one difference between a conventional residence hall and a living-learning community is how living-learning communities contribute to students' ability to make use of their institutions' educational opportunities. They further state that merely placing a program within a residence hall does not make it successful. Critical to the success of a learning community is intentional collaboration and connection with the academic community. Smith (2001) indicates that “Learning communities are a broad structural innovation that can address a variety of issues from student retention to curriculum coherence, from faculty vitality to building a greater sense of community” (p. 1).

“Living learning centers, with their foundations in both student affairs and academic affairs sectors of campus, offer an opportune avenue for combining formal, course oriented learning activities of academic affairs with the programmatic learning activities typical of residence life” (Henry & Schein, 1998, p.9). Brower and Dettinger (1998) argue that an effective learning-community must be an interaction of academic,

social and physical components. According to them, the academic component regards the curriculum content; the social component regards interpersonal relationships among students, faculty, and staff; and the physical component regards the space where the community meets. Smith (1994) defines living-learning communities as living units with intentional academic programming such as classrooms, tutoring, advising and libraries, but that faculty do not live among the students. According to Blimling (1998), common characteristics of a living-learning community include students taking at least one academic course together, usually in the residence hall, and some type of enriched cultural or academic experience is associated with the program.

The connection with the academic community is the critical piece in the living-learning community. In "College: The Undergraduate Experience", Boyer (1987) revealed the many conflicts between academic and out-of-classroom activities. Zeller (1991) writes that the positive benefits students receive by actively participating in the campus community are widely acknowledged by leaders throughout higher education. This has generated renewed support for residential programs that support academic initiatives. Reflecting on the gap between academics and students affairs, Zeller (1996) states that collaborative efforts between student affairs and academic areas offer unique opportunities to combine formal learning with out-of-classroom experiences. Living-learning communities are an example of such collaboration.

“The learning community format is intended to remove obstacles to effective teaching and learning by placing greater emphasis upon collaborative learning, such as freshman interest groups (FIGS) and by increasing student faculty interactions and interdisciplinary linkages” (Romanoff, p. 245, 2000). Clark, Miser, and Roberts, (1988) found living learning programs to be more intensive, combining physical structure, faculty involvement and purposeful programming, producing deeper engagement with

academic aspects of the university experience. Citing the findings of a meta-analysis investigating whether students receive a quantifiable educational benefit from a residential college greater than that of a conventional residence hall, Blimling (1998) states, "There is a high probability that residential colleges increase students' academic performance, retention, and living social climate" (p.57).

With the exception of a few studies (Centra, 1968; Pemberton, 1969), research clearly supports the role of learning communities on a variety of student learning outcomes. Pascarella & Terenzini (1991) indicate that on most educational criteria, living in a living-learning community offers more benefit than living in a conventional residence hall. Participation in a living-learning-community is associated with higher grade point averages, higher retention rates, increased cognitive abilities, increased social and academic integration, and increased satisfaction with the college experience. Summarizing research on the effects of living-learning centers, Pascarella and Terenzini (1991) state, "These findings indicate that a living-learning center's effects may be indirect rather than direct, mediated by the nature and frequency of the interactions they promote with faculty and peers" (p. 306).

FOCUS ON THE FRESHMAN YEAR

Typically, and for sound reasons, first year living-learning communities are aimed at helping first year students make the transition to college. The literature supports that students are most at risk of dropping out during the freshmen year and there is a direct link between student success and freshman year experiences (Noel, Levitz and Saluri, 1985; Tinto, 1998). Chickering (1974) noted that "Residents, in response to immersion in a college environment, change most during the first two years. They decelerate and may even slightly regress after that" (p. 44). Similarly, Moos (1979) discusses the decreased impact of living in the residence halls for four years, suggesting "that the value

of the residence hall experience tapers off after the student's first or second year" (p. 23). This suggests that first year students are more responsive to the positive influences present within the college environment.

Astin (1985) provides another practical reason for placing emphasis on the freshman year experience. In Achieving Educational Excellence he notes that colleges and universities typically allocate the greatest amount of resources to graduate and professional studies, followed by upper-division undergraduate, and then lower division undergraduate, even though most students who drop out do so during the freshman or sophomore years. Astin reasons that it would seem appropriate to allocate more resources to these two years. Astin's research highlights the value of living-learning programs geared towards first-year students and supports the creation of residential programs designed to maximize the freshman year experience.

GOOD PRACTICES IN HIGHER EDUCATION

In response to efforts to restructure higher education and create a seamless learning environment, living-learning communities are being developed to enhance the undergraduate experience. To be effective and realize their full potential, however, living-learning communities must have clear goals and must be founded on concepts that engage students in the learning process. Chickering and Gamson (1987) provide seven "good practices" in higher education that are believed to promote student learning. According to Chickering and Gamson, "good practices" are those that:

1) Encourage contact between students and faculty.
2) Develop reciprocity and cooperation among students.
3) Encourage active learning.
4) Give prompt feedback.
5) Emphasize time on task.

6) Communicate high expectations.

7) Respect diverse talents and ways of learning.

"While each practice can stand on its own, when all are present their effects multiply. Together, they employ six powerful forces in education: Activity; Expectations; Cooperation; Interaction; Diversity; and, Responsibility" (Chickering & Gamson, 1987, p. 2). Utilizing the work of Chickering and Gamson, ACPA and NASPA (1997) adopted a similar set of guidelines outlining good practices in student affairs. In "Involving Colleges," Kuh, Schuh, and Whitt (1991) examine 14 institutions that have instituted these good practices. Although the institutions vary on a number of measures, they share a common institutional culture which emphasizes student involvement, the out-of-class experience, and a focus on the freshman-year experience.

SUPPORTING THEORIES

Good practices in higher education along with the underlying concepts that support residential living and living-learning communities have a foundation with various constructs, such as environmental, student involvement and quality of student effort theories that lend support to the student learning process.

Environmental Theories

In the 1930's, psychologist Kurt Lewin (1936) advanced the theory that human behavior (B) was a function of the state of the person (P) and the state of the environment (E), B=*f(*PE*),* or simply stated, behavior is a function of the interaction between the person and the environment. Lewin's work laid the groundwork for student-environment interaction studies that followed and provided a broad concept for understanding the importance of residential living-learning communities. Environmental theories focus on

how the physical features of the environment, the characteristics of people within the environment (human aggregates) and the organizational structures of the environment influence student behavior (Strange and Banning, 2001).

Physical environments can either enhance or deter various behavioral aspects, such as how students utilize space within the environment, social interactions between students, or how students feel about their environment. "At the every least the physical environment sets broad limits in the phenomena that can occur in any given setting, making some behaviors more or less likely to occur than others" (Michelson, 1970, p.25). Strange and Banning (2001) conceptualize the influence of the physical environment to three main areas: architectural determinism, which suggests a direct link between the built environment and behavior; architectural possibilism, which views the environment as a source of opportunities that limits, but does not restrict, behavior; and, architectural probabilism, which assumes that certain behaviors have probabilistic links to the built environment.

The notion that human aggregates influence the environment has been extensively studied by Cark and Trow (1966), Astin (1968, 1993), Holland (1966, 1973) and others. These authors advance that the degree to which student behaviors, values, and attitudes and expectations impact the environment can be measured and characterized. Strange and Banning (2001) write that human aggregates influence the degree to which people are attracted to, satisfied with, and retained within the environment.

The notion that an "environmental press" can be inferred from the types of activities that occur within an environment has been advanced by various authors (Murray 1938; Pace & Stern 1958; Stern, 1970; and, Moos, 1979). According to Moos (1979), "the underlying idea is that the consensus among individuals characterizing their environment defines the social, or normative, climate, which exerts a powerful influence

on students' attitudes and behaviors" (p. 26). "For example, if 80% of a representative sample of students on a particular campus report that students frequently spend time studying in the library, a significant press toward academic achievement might be inferred" (Strange & Banning, 2001, p. 87).

Strange and Banning (2001) write that a university's organizational structure can be thought of as an environment with a sense of purpose, organized to achieve a stated mission and targeted goals and objectives. The Western Commission for Higher Education asserts that every campus has a design, and student behavior is affected by this design (WICHE, 1973). Upcraft et al. (1984) indicate that an institution's climate exerts a powerful influence on entering students. They identify that student success is enhanced by a campus environment that: "1) Promotes student-to-student interaction (Feldman and Newcomb, 1969); 2) Promotes faculty-student contact (Pascarella & Terenzini, 1977; Terenzini & Pascarella, 1979); 3) Offers on campus residential living (Chickering, 1974; Astin, 1977; Upcraft, Peterson, & Moore, 1981b); and, 4) Offers extensive extracurricular opportunities (Winter, McClelland, & Stewart, 1981; Lenning, Sauer, & Beal, 1980; Ramist, 1980)" (p. 10).

Drawing upon relevant research, Upcraft et al. (1984) provide that students will be most happy and adjusted in an environment that focuses on and supports the following aspects:

1) Developing academic and intellectual competence (Chickering, 1972; Lenning & others, 1974; Krathwohl, Bloom, & Masia, 1964; Bowen, 1977; Baird & Hartnett, 1980; Heist & Yonge, 1962; Warren, 1978; Morrill, 1980), (p. 14).

2) Establishing and maintaining interpersonal relationships (Billson and Terry, 1982; Fielder and Vance, 1981; Simpson, Baker, & Mellinger, 1980) (p. 15).

3) Developing a sex-role identity and sexuality (Erikson, 1963; Deutsche & Gilbert, 1976; Bem, 1975; Pettus, 1976; Brooks-Gunn & Fisch, 1980) (pp. 16-17).

4) Deciding on a career and lifestyle (p. 18).

5) Maintaining personal health and wellness (Edlin & Golanty, 1982; Selye, 1975) (pp. 19-20).

6) Formulating an integrated philosophy of life (Chickering, 1972; Perry, 1970; Kohlberg, 1971) (p. 21).

Riker (1965) discussed the importance of creating a physical and social environment. He notes that the physical environment can have important physiological and psychological effects. The social environment is just as important since learning can be impacted by the social group. Similarly, Decoster and Mable (1980) found that students are more likely to perform better and evaluate the college experience more positively when they view the environment as nurturing and satisfying. Moos (1979) contends that residential settings may be one of the most important forces influencing student behavior and success.

Involvement Theory

Empirical evidence based largely on Astin's theory of involvement (1985), supports the notion that independent of student pre-college characteristics, specific collegiate experiences and accomplishments can enhance educational attainment (Pascarella & Terrenzini, 1991, Chickering, 1974, Tinto, 1997). Taking a more dire approach, Baird (1990) indicates that lack of involvement can have serious negative

impacts on student learning. Specific activities and experiences that can enhance educational attainment include involvement in student organizations, living on campus in a residence hall, and interactions with peers and faculty (Astin, 1984, 1985, 1996; Pascaerlla & Terenzini, 1991, Tinto, 1997). Astin (1996) states that involvement is a powerful means of enhancing almost all aspects of undergraduate student life. He indicates that the three most powerful forms of involvement are: academic involvement, involvement with faculty, and involvement with peer group. Involvement also helps students realize goals through development of personal resources in the form of interpersonal skills, self-confidence, and specialized knowledge (Tinto, 1997).

According to Astin's theory of involvement, students learn by being involved. "Quite simply, student involvement refers to the amount of physical and psychological energy that the student devotes to the academic experience" (Astin, 1984, p. 297). Astin indicates that involvement implies a behavioral concept. He states that involvement resembles what theorists have referred to as time on task, and vigilance or quality of effort. Astin (1984) discusses that motivation is important; not so much as what the student thinks or feels, but rather what the student does. Astin's theory of involvement also encourages teachers to focus less on what they do and more on what the student does. The most critical aspect of the theory of involvement is that it places students in an active versus passive role in the learning process.

Effort

Research also suggests a relationship between the quality of student effort, or the degree to which the student invests in learning activities and student learning outcomes (Pace, 1979, Tinto, 1997, Hu and Kuh, 2003). According to Pace (1984) "Education is both a process and a product" (p.4). He writes, "All learning and development requires an investment of time and effort by the student. Time is a frequency dimension. Effort is

a quality dimension in the sense that some kinds of effort are potentially more educative than others" (Pace, 1980, p. 10).

As an example of Pace's concept of effort, it takes more effort and is more educative to search through the library for relevant materials than merely using a reference assigned by the instructor. Pace (1984) indicates that quality of effort can be measured by how students use major resources and opportunities for learning and personal growth that are provided by the college. Similarly, Lahmers and Zulauf (2000) report that a commonly used quantitative measure of effort is the amount of time devoted to task. Two sections of the College Student Experiences Questionnaire (CSEQ) are useful in examining the relationship between quality of effort and student learning (Pace, 1980; 1984; Pike, 1990).

Social Environment

Extensive justification exists for the role of social participation in the educational process. Students who live on campus have significantly more social interaction with peers and are more likely to be involved in extracurricular activities. "Living in a residence hall can enhance the accentuation process since students often become like the other students with whom they associate" (Moos, 1979, p. 24). Residence hall living, particularly living in a living-learning hall, aids in this process by exposing students to other achievement-oriented peers enrolled in similar classes, as well as having similar interests and goals.

Astin (1996) indicates that the student peer group is the strongest single source of influence on cognitive and affective development. The peer group has the potential to more intensely involve students in the educational experience. Twale and Sanders (1999) argue that students need peer interaction to help them better understand and clarify points

learned in the classroom. However, peers can either positively or negatively influence the college experience (Moos, 1979; Tinto & Goodsell, 1994; Astin, 1996). Kuh et al. (1991) indicate that the peer group may serve to reinforce inappropriate behaviors and may foster "anti-intellectual behavioral patterns" (p. 13).

"The fact that entering students are usually open to change and amenable to the influence of the campus environment underscores the need to analyze student residential arrangements" (Moos, 1979, p. 25). Decoster (1968) indicates that residential peer groups can significantly influence academic achievement. He states that learning is impacted by roommates, and student living groups who take the same academic course, or same field or major. Blimling (1988) also found that roommates can have a significant influence on each others academic performance. However, unlike Decoster, Blimling's (1988) meta-analysis of various residence hall environments found that homogeneous assignment by academic major did not lead to better academic performance. Blimling found that assignment by academic selectivity (honors, living-learning center, etc.) or by class level (all freshman residence hall) enhances academic performance.

In a study involving 149 participants, Kuh (1995) reported that peers were mentioned more frequently as being instrumental to development of interpersonal competence, humanitarianism and cognitive complexity. Pacarella and Terenizini (1991) indicate that one of the most effective ways colleges can enhance persistence and degree completion is through fostering conditions that promote social involvement.

Moos (1974) advanced the idea that the residence hall environment has a distinct social climate, measured by the extent to which people are involved in the environment, the extent to which they support and help each other, and the extent to which there is

spontaneity and free and open expression among them. Key aspects are involvement and emotional support. Research by Demakis and McAdams (1994) confirms a relationship between college satisfaction and social support, contact with friends, faculty and organizations. They also found that high versus low levels of support are related to low psychological distress; and they report that support and stress are negatively correlated. Mcgrath, Gutierrez and Valadez (2000) indicate that social support among college students has been identified as a factor in helping students transition to the university environment. They also found that social support systems serve as a "stress buffer" when individuals perceive they are receiving a high level of social support (p.415).

Social support can have other influences on the student as well. Butler and Campbell (2003) indicate that the ACUHO-I educational benchmarking resident survey consistently confirms that the ability to interact with others in the residence hall environment is the top predictor in overall satisfaction with the residential living experience. According to Terenzini, Pascarella and Blimling (1996), research points to peer teaching and tutoring as having a positive influence on learning. In essence, peer teaching and tutoring, such as the interactions which occur in study groups, increases student involvement and enhances mastery of the content.

Blimling (1998) argues that social climate is an important variable that should not be discounted as it impacts a number of issues including retention, a student's level of involvement and his/her level of contact with faculty. He indicates that students living in a residential college are significantly more likely to have a better social climate than students who live in a conventional residence hall. Similarly, Henry and Schein (1998) found that inclusiveness and the unique co-curricular aspects of the living environment increase student commitment to the learning process.

Faculty Interaction

Considerable evidence exists that faculty influence on students is enhanced beyond the formal classroom setting. Attributed as a causal link, interaction with faculty strengthens a student's bond with the institution and influences a student's educational attainment and aspirations. The residence hall environment provides an ideal out-of-class setting for informal student-faculty interaction to occur.

Chickering's (1969) research reveals that the impact of faculty contact is second only to the impact of the peer group. A study conducted by Brown (1974) involving faculty-led residence hall discussion groups found that students who participated in the intellectual discussions were more interested in reflective thought, more interested in science and more inclined toward using reason and scientific method to resolve problems than students who did not participate in discussion groups as measured on the Omnibus Personality Inventory. In a study on student and faculty interactions, Cokley (2000) found that students who had more positive perceptions of faculty encouragement had higher self-concept scores and higher academic motivation scores than students who had more negative perceptions of faculty encouragement. Cokley's study links academic outcomes to academic motivation and academic self-concept, suggesting that motivation and self-concept may be related to quality student-faculty interactions.

Terenzini et al. (1996) indicate that most researchers have found positive associations between the nature and frequency of a student's out-of-class contacts with faculty and academic gains or cognitive development. They conclude that although many of these findings are based on student's self-reported gains of knowledge or intellectual skill, evidence based on objective measures also leads to the same conclusions. They caution however that the causal direction of influence is problematic in that it cannot be determined if contact with a faculty member promotes development, or if students who

gain more are more inclined to seek contact with faculty. None-the-less, Terenzini et al. (1996) conclude that student-faculty contact and student learning are positively related and should be promoted as a good practice within the institution.

Kuh (1995) found differences between men and women in the amount of contacts with faculty and gains attributed to these interactions. Women reported more faculty contacts than men and attributed gains in interpersonal competence to these interactions. Men were more likely to associate contact with faculty to gains in cognitive complexity. Baxter Magolda (1987) provides evidence that students seek different relationships with faculty. Offering a developmental scheme based on Perry's Theory of Intellectual Development, Baxter Magolda asserts the idea that different types of faculty-student relationships contribute to the student being responsible for their own learning. The ideal relationship is determined by the student's intellectual stage of development. Baxter Magolda's research provides support for out-of-class student-faculty relationships that can be developed in the residence hall setting as they provide an opportunity for students to seek out and develop relationships with faculty that might not be developed through the traditional classroom setting.

Cognitive Development

Astin (1984) and Pace (1980) found that a student's quality of effort or level of involvement in college has significant and positive influence on various dimensions of cognitive development. Interactions with peers and faculty are significantly linked to cognitive development. Residence hall living can significantly enhance opportunity for peer and faculty involvement. While much is known about how students change and develop during college, Terenzini et al. (1996) indicate that less is known about how students' out-of-class experiences influence their academic, intellectual or cognitive development. Research suggests that students develop "holistically" and that cognitive

learning is positively shaped by a wide variety of out-of-class experiences, particularly a residence hall environment that purposefully integrates academic and non-academic experiences (Pascarella & Terenzini, 1991; Terenzini, Pascarella & Blimling, 1996, and Tinto, 1997).

Pascarella, Bohr, Nora, Zusman, Inman and Desler (1993) tested the hypothesis that on campus students would demonstrate greater freshman year gains than would off campus, commuting students. Controlling for pre-college characteristics, they found that resident students made larger freshman year gains on a measure of critical thinking than off campus, commuting students. However, no significant difference in math scores was found suggesting that residential living may be most influential in fostering cognitive growth in areas that are more general in nature and not associated with a specific course. "Such findings suggest that residing on campus may enhance the impact of college, not only in areas such as student values, attrition, personal development and persistence, but also in student cognitive and intellectual growth" (Pascarella et al., 1993, p. 219). This study supports the notion that cognitive development is enhanced when reinforced through out-of-class experiences.

Pascarella (1985b) indicates that with minor exceptions, there is little evidence to suggest that traditional measures of institutional quality as measured by faculty-student ratios, library size, or formal education of faculty, have any significant influence on student learning. Rather, he cites, the influence on learning tends to be on the quality and frequency of interactions with major agents of socialization on campus such as faculty and peers. Pascarella's findings support Pace's (1979) view that students' quality of effort, or how effectively students maximize available resources, is an important factor in the learning process.

Values

The evidence suggests that students who live on campus tend to experience greater value changes than students who live off campus. Pascarella and Terenzini (1991) report residence hall students shift long-term occupational aspirations away from financial well being and business success towards a greater sense of obligation to others. Living in a residence hall was also associated with increases in political liberalism and decreases in political conservatism. Pascarella and Terenzini also state that students gain in their cultural, aesthetic, and intellectual sophistication, while expanding their interests and activities. Chickering (1974) links the advantages of living on campus to changes in attitudes, values, future plans and aspirations, and intellectual interests by stating that "The most potent exchanges occur in situations where persons come to know each other fully" (p. 132).

Moral Development

Pascarella et al. (1994) indicate that the evidence in the area of principled moral development is less consistent. Rest and Deemer (1986) report that living on campus had a statistically significant impact on a student's moral development. The influence is indirect, in that living on campus facilitates and increases participation in academic, intellectual, and social involvement which directly enhance principles of moral development.

SUMMARY

This chapter provided an historical overview of the role that residence halls have played in the evolution of colleges and universities and highlighted events that led to the separation of in-class and out-of-class experiences. The importance of developing the whole student was discussed along with the rise of student affairs as a distinct profession

to serve the needs of college students. Theories about the effect of the college environment and a student's level of effort or engagement with the college environment were presented along with literature addressing the positive impact that residence halls and living-learning communities have on students growth and development. Faculty and peer interaction were discussed as significant variables in promoting student success. Additionally, good practices in higher education were discussed as a means to more deeply engage students into the overall educational process. The following chapter will examine the relation between student background variables, institutional environment and student effort on various academic and social gains. The relation between place of residence, college GPA and retention will also be examined.

CHAPTER III

Design and Method

A quantitative, correlational design was utilized to examine whether freshman students who participate in a living-learning community take greater advantage of available resources and opportunities that exist on campus compared with both students who live in a conventional residence hall and students who commute to campus. The study was conducted at a small, private, Catholic institution located in the southwestern United States.

Six research questions were developed to analyze specific learning outcomes. Questions one through four analyzed student perceptions of the college environment; student engagement with various college activities; self-reported academic and social gains; and, predictors of academic and social gains. Data for these questions came from the College Student Experience Questionnaire (CSEQ). Literature suggests that the selected activities measured on the CSEQ are associated with higher learning outcomes. It is important to note that the data for questions one through four came entirely from students' self-reported responses to CSEQ items. A discussion concerning the reliability of self-reporting is included in this chapter. The final two research questions analyzed whether participation in the living-learning community predicts higher grade point averages (GPA) and increased retention rates. Institutional data on all freshmen who entered the university between the years 2001 through 2004, the four years that the living-learning community had been in existence, were analyzed.

While the primary focus of this study was quantitative analyses, qualitative interviews were also conducted, providing the opportunity for student participants to

discuss their personal experiences. This process provided additional information, and data from the qualitative interviews was reported in chapter 5 to highlight, in the students' voice, results of the quantitative analyses.

Pascarella, Terenzini and Blimling (1994) indicate that measuring the impact of different residential living settings can take two basic forms; randomized, true experimental design; and, quasi-experimental or correlational studies. True experimental design assumes random assignment of the individuals to be studied. In theory random assignment assures that individual student traits are evenly distributed across the different living arrangements in an unbiased manner, providing comparable groups. Thus, with a true experimental design, observed outcomes can be attributed to the different living arrangements and not attributed to different types of students within each living arrangement.

This study involved students who self-selected into a living-learning community, preventing the use of a randomized, true experimental design. With self-selection, it is feasible that the living-learning community attracted students with certain characteristics. "Without taking such differences in student aptitudes and traits into account, it is easy to mistakenly conclude that different residential arrangements are causing different student outcomes, when the different student outcomes observed may simply reflect the fact that substantially different kinds of students select, or are recruited to, different residential arrangements to begin with" (Pacarella, Terenzini & Blimling, 1994, p. 24). Although the influence of student traits cannot be controlled completely, in this study statistical controls were used to account for some student differences.

SURVEY ADMINISTRATION

Data collection involved the administration of a web-based survey in April 2005. Approval to administer the instrument was gained from institutional review boards (IRB)

at the University of Texas at Austin and the site institution. The site institution provided electronic mail addresses for all participants, excluding students under the age of eighteen years old. Dillman's (2000) procedures for internet surveys were followed.

Participants were contacted via electronic mail up to a total of five times, including the initial contact, three follow-up emails and a thank you email. Dillman (2000) indicates that a four contact email strategy will obtain response rates similar to that obtained in a postal mail survey. The initial email contact explained the general purpose of the study and invited students to share their experiences. The email also explained that participation in this study was voluntary, all information provided would be confidential, and that information presented from the study would be in aggregate format. A more detailed explanation about the study and the student's rights was included with the initial contact (see Appendix A). Three follow-up emails were sent to non-respondents within a ten-day period of the initial contact. Students who had already completed the survey received an email thanking them for their participation. Students consented to participate by accessing the web-based survey by means of the user code provided in the email.

The email invitation also asked students if they would like to participate in an interview about their college experience. Interested students contacted the researcher directly to schedule an interview. Interviews were conducted in a residence hall conference room at the site institution. Students who participated in the interview were required to sign a consent form prior to completing the interview (see Appendix B). Students received $5.00 upon completion of the individual interview.

Study Participants

The 2004 freshman class was studied. A total of 294 invitations to participate in the web-based survey were sent via electronic mail to students identified by the institution as members of the 2004 fall semester freshman class. Of the 294 email invitations, 12 emails were returned as "undeliverable." Eighty-five students responded to the invitation to participate with 72 students returning useable surveys. The overall response rate for the survey was 25.5%.

The initial IRB approval for the study included the initial contact and only two follow-up emails. After the second follow-up email, the response rate was approximately 20 percent. In an effort to increase response rate, approval from the site institution IRB was obtained for a third follow-up email. The third contact yielded an additional 16 participants, increasing the overall response rate to 25.5 %.

Use of a monetary incentive, on-site administration of the survey, mailing the survey to a physical address, or access to telephone numbers to contact non-respondents directly may have increased the overall response rate for the survey. A monetary incentive was not financially feasible. Initially a paper administration of the survey at the site institution was planned. However the limited time period after IRB approval was received necessitated administration of a web-based survey and thus, inhibited mailing the survey to a physical address. Telephone contact was not considered given the site Institutional Review Board's concern for limiting student contact.

Table 1 shows the overall response rate by age, gender, race, place of residence, high school GPA and SAT I composite score. When available, institutional data for the entering freshman class are also reported. The majority of the students completing the

Table 1 Demographics of Study Participants (N=72)

Background Variables		**Students in Sample**	**Freshman Class$_{/1}$**	
		Percent	**Percent**	
Age				
	18-19 yr old	96.4	n/a	
	20-23 yr old	4.6	n/a	
Gender				
	Male	27.8	37.3	
	Female	72.2	62.7	
Race				
	White	44.4	39.2	
	Non-White	55.6	60.8	
Parent Education Level	One or both College Graduate	65.3	n/a	
Place of Residence				
	Learning Community	16.6	7.0	
	Traditional Residence Hall	41.7	37.0	
	Off campus	41.7	56.0	
		Mean	**Mean**	**p value**
High School GPA		3.47	3.50	.501
SAT I Composite Score		1191	1152	.003

Note. Freshman class data obtained from Common Data Set and 2004/05 Fact Book

survey were 18 to 19 years of age (96.4%). Over 72% of the participants were female and 55.6% of the participants were non-white. In comparison, females represent 62.7% and non-Whites represent 60.5% of the freshman class population. Chi-Square Goodness of Fit tests comparing the observed frequencies in the sample population to the expected frequencies in freshman class population indicated no significant difference at the .05 level, suggesting that the sample distributions for gender and race conform to the distribution for the freshman class.

For place of residence, 16.6% (N=12) of the sample population resided in the living learning community, 41.7% (N = 30) of the sample population resided in the residence hall and 41.7% (N = 30) of the sample population resided off campus. Of the 30 off campus students who participated in this study, 69% indicated they lived at home with parents. As reflected in table 1, participation rates by students residing in the living-learning community and residence hall in this study were higher than their overall representation in the freshman class population. The Chi-Square Goodness of Fit test indicates a significant difference at the .05 level, suggesting place of residence influenced a students decision to participate in the survey.

On average, the students who participated in the survey had an SAT score of 1191 compared to 1153 for the entering freshman class. Survey participants also reported an average 3.47 high school GPA compared to 3.50 for the entering freshman class. A one-sample t-test indicated a statistically significant difference in SAT scores at the .05 level. The one-sample t-test revealed no significant difference in high school GPA scores at the .05 significance level. The significant difference in SAT scores reported between the survey participants and the entering freshman class suggests that student characteristics

such as motivation or academic preparation may have played a role in a student's decision to participate

Seven students consented to participate in the on campus interview. The seven students who volunteered also completed the on-line survey. Three of the students resided in the living-learning community, two students resided in the traditional residence hall and two students commuted to campus each day. Four of the students who participated in the interview were male and three of the students were female.

INSTRUMENT

The College Student Experiences Questionnaire (CSEQ), the 1998 fourth edition, designed by C. Robert Pace in 1979, was used to gather the quantitative data for this study. Gonyea, Kish, Kuh, Muthiah and Thomas (2003) indicate that more than 300,000 students have completed the instrument since its inception in 1979 and over 100,000 students have completed the fourth edition. Data from the CSEQ are useful in helping institutions evaluate student behaviors and which aspects of the institution's environment are related to learning outcomes. The CSEQ is an eight page, 180- item questionnaire that includes items known to be highly correlated with learning, based on Pace's extensive research.

The questionnaire can be completed in approximately 30 minutes. The questionnaire is organized into seven sections: (1) background information, (2) college activities, (3) conversations, (4) reading and writing, (5) opinions about college, (6) college environment, and (5) estimate of gains. Up to 20 questions can also be added to

individualize the survey to a particular institution. Five additional questions were added for this study (see Appendix C).

The college activities, conversations, and reading and writing sections are comprised of 109 items which ask students to provide information about the activities in which they engage, including the amount of time and energy they invest in various activities, and also the extent to which they utilize the various resources provided by the campus. These 109 activities can be divided into 13 quality of effort scales. Each of the activities is presumed to contribute to student learning and development (Strange and Banning, 2001) and the scales represent a reliable measure of student effort (Pace, 1980). Additionally, 43 of the activities can be used to create three indices which measure good educational practices. If the institution is providing activities to promote student learning then students will respond accordingly with increased levels of effort. (Strange and Banning, 2001; Gonyea et al., 2003).

The college environment section consists of 10 items that constitute three scales. Seven of the environment items ask students to indicate how much emphasis is given to: academic, scholarly and intellectual qualities; aesthetic, expressive and creative qualities; critical, evaluative and analytical qualities; understanding and appreciation of human diversity; developing information literacy skills; developing vocational and occupational competence; and, personal relevance and practical value of courses. The remaining three environment items ask the student to rate the quality of relationships with other students, administrative personnel and faculty members. Pace (1984) states that a great deal of research documents the importance of the college environment in facilitating student learning and development. He writes that it is the "psychological," not the "physical,"

environment that facilitates learning and development (p. 18). The CSEQ is designed to measure the psychological environment that exists on the campus.

The final section of the instrument contains the items that comprise the five estimate of gain scales. In this section, students are asked 25 questions to estimate the extent to which they have gained or made progress in achieving a variety of important educational objectives. Pace (1984) advances that the "self-reported gains can be regarded as an indication of the extent to which the students believe they are achieving important objectives of a college education; and the extent to which high quality effort contributes to high attainment or progress toward related goals" (p. 21).

Rationale for Using CSEQ

Pace (1984) believes that education is both a process and a product. He writes that the educational process is often evaluated in terms of what it contributes to the product, and that some processes have the potential to produce greater learning. Pace (1984) and Astin (1980) share the view that learning requires an investment of time and energy by the student.

The campus environment, which includes the physical attributes of the campus as well as the campus climate with regard to creating a learning environment, plays a significant role in the educational process. Given that a great number of campus experiences can contribute to the educational process, it is important to identify the campus experiences that have the greatest impact on student learning. In developing the CSEQ, Pace (1984) chose events and experiences that occur in the college environment that are purposefully intended to facilitate learning and development. Pace (1984) reported the "most salient of these events and experiences are clustered around a number of fairly common facilities -- classrooms, libraries, laboratories, residence units, student unions, chapels athletic spaces, studios, galleries, theatres, auditoriums and others. Each

facility has a particular purpose and there are characteristic activities that occur in them" (pp. 7-8). Pace (1980) also focused on other events and experiences that are an important part of the college experience, including the opportunity to interact with faculty, the involvement in campus organizations, the development of friendships and interpersonal relationships, and the engagement in meaningful conversations. In support of Pace's focus on events and activities, Baird (1990) states, "It is not the presence of facilities, funding and staff, but the uses to which they are put that is critical" (p. 278).

"The College Student Experiences Questionnaire (CSEQ) is based on a simple, but powerful premise related to student learning. This premise is that the more students put into using the resources and opportunities an institution provides for their learning and development, the more they benefit" (Kuh, Vesper, Connolly and Pace, 1997, p. 1). Borden (2001) indicates that the CSEQ is one of the few national assessment instruments that inventories both the process of learning (e.g., interactions with faculty, collaboration with peers, and writing experiences) and progress towards desired outcomes (e.g., intellectual skills, interpersonal competence, and personal values). The CSEQ was selected for this study because it assesses both the type and quality of effort that students exert in the learning process. Quality of student effort directly impacts the amount and nature of student learning and development at the institution.

Validity and Reliability

Pace (1984) writes that a good test is discriminating, valid and reliable. Content validity refers to the extent that an instrument accurately measures what it intends to measure. Brown's (1985) review of the CSEQ in the Ninth Mental Measurements Yearbook indicates that the CSEQ is valid, reporting, "The factors are generally congruent with theoretical constructs about student life, and the pattern of responses lends support to the hierarchical nature of the quality of effort scales" (p.366). Thus, one

would expect a student who spends a great deal of time utilizing the resources the library has to offer, would have higher scores than an individual who did not utilize the library. Criterion validity refers to the correlation between measurement items and known and accepted standard measures or criteria (Garson, 2006d). Pike (1995) reports that scores from the CSEQ are highly correlated with grades and desired outcomes of general education. Additionally, Kuh et al. (1997) indicate that CSEQ self-estimates of progress are correlated with external objective evidence collected over decades.

The CSEQ is also reliable as the items for each scale correlate with each other and with the total score for each scale. "Reliability refers to the degree to which test scores are free from errors of measurement" (American Psychological Association, 1985, p. 19). In other words, reliability assesses the degree to which questions that compose a scale elicit responses with similar meaning and intent. Cronbach's Alpha is used to measure the internal consistency and ranges from 0 to +1.0, with alpha scores above 0.70 suggesting that the items in the group are measuring the same thing (Nunnally, 1978; Garson, 2006c).

Brown's review of the CSEQ (1985) reports Cronbach Alpha reliability scores ranging from 0.79 to 0.90 for quality of effort scales. A review by Decoster (1989) in the Tenth Mental Measurements Yearbook provides similar results. Gonyea et al. (2003) also report that Cronbach's Alpha scores ranged from 0.74 to 0.92 for the quality of effort scales, from 0.70 to 0.75 for the college environment scales, and from 0.78 to 0.87 for the estimate of gain scales.

Reliability of Self-Reports

The CSEQ relies upon student self-reports to gain needed data. Research generally supports the notion that surveys involving self-reports can serve as proxies for achievement test scores and provide information about educational processes that are

related to educational outcomes (Laing, Sawyer and Noble, 1988; Pike, 1996, 1999; Anaya, 1999). In some instances, such as reports of time spent on an activity, self-reporting may be the only practical source of information. Self-reporting is not without limitations as it relies on opinion and tends to measure generic outcomes; while exams, which measure performance, test specific skills with higher accuracy (Astin, 1993; Pike, 1996).

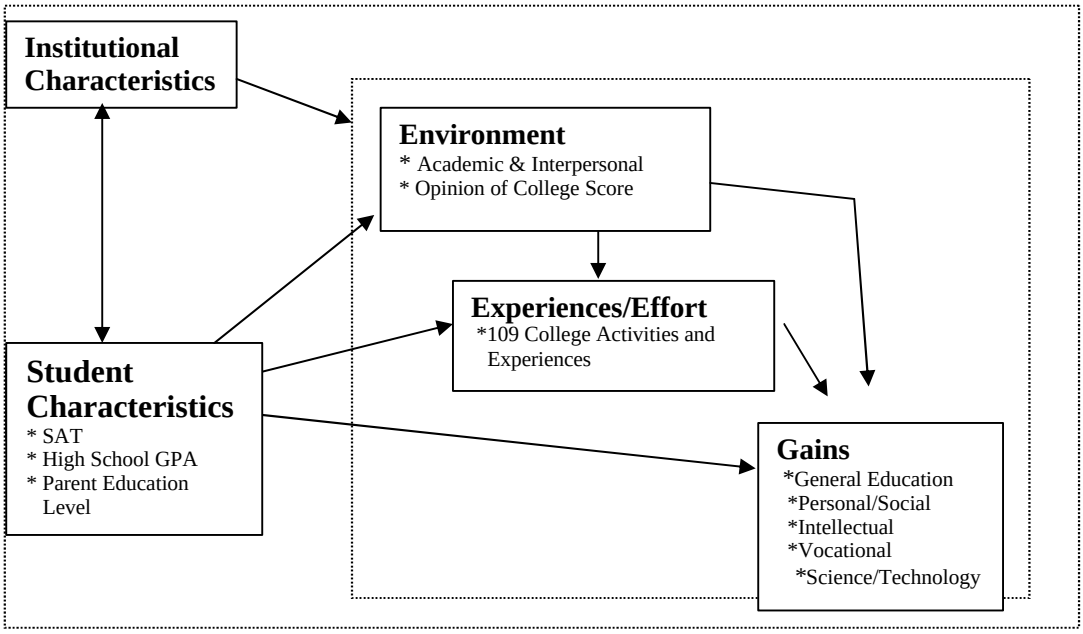
Ouimet, Kuh, Smallwood and Springer (2001) indicate that the validity and credibility of self-reporting can be affected by the inability of respondents to provide accurate information in response to a question, or an unwillingness to provide truthful information. Self-reports are also subject to the "halo effect," or inflating scores on variables such as the rating of a particular behavior. Pike (1999) indicates that to the extent that the "halo effect" exists, it appears relatively constant across different types of students and institutions, thus equalizing the effect so that it is neither an advantage nor a disadvantage to any group. These effects would be problematic in that they could limit the findings of this study.

Pace (1984) indicates that "The accuracy of answers depend on the clarity of questions, on whether respondents have a good base in experience for answering the questions, on whether the form in which the answers are to be given is appropriate; and on whether the respondents regard the questions themselves as meriting a serious and thoughtful response" (p. 35). Ouimet et al. (2001) adds that validity of self-reporting is increased when the questions refer to recent activities and when the questions do not encourage the respondent to respond in socially desirable ways. The CSEQ was designed to meet these requirements.

CONCEPTUAL FRAMEWORK

The conceptual framework for this study is based on the simplified version of Pascarella's (1985b) Causal Model that was proposed by Kuh et al. (1997). The model employs fundamental theories outlined in chapter two: involvement, quality of effort and environment theories. The model outlines the relationships or directions of influence between student background information, institutional environment, student behaviors (quality of effort) and student gains (learning). The model depicts essential elements of the learning process that are addressed in the CSEQ. The model hypothesizes that student background characteristics, institutional environment, student interactions with socializing agents, student perceptions of the environment and student effort interact to influence learning both directly and indirectly.

Figure 1 Sub-model of Pascarella's General Causal Model using the CSEQ



Source: Kuh, G. D., Vesper, N., Connolly, M. R. and Pace, C. R. (1997) College Student Experiences Questionnaire: Revised Norms for the Third Edition. Bloomington, IN: Center for Postsecondary Research and Planning, Indiana University. P. 37.

DATA ANALYSIS PROCEDURES

Data analysis in this study consisted of four steps: 1) addressing missing data, 2) descriptive statistics to summarize the two data sets, 3) reliability analyses on the CSEQ quality of effort, environment and gain scales, and 4) analysis of the data. The primary data sources for this study included the College Student Experiences Questionnaire, institutional data provided by the site institution, and qualitative interviews. The CSEQ data set contained 72 cases of student self-reported scores on a variety of college activity, environment and gain items. The institutional data set contained 1173 records of freshman class data for the years 2001 through 2004. Qualitative data included information from seven student interviews.

Missing Data

George and Mallery (2006) suggest that it is acceptable to substitute up to 15 % of missing values with little influence on the outcome. For the CSEQ survey data set (N=72), 13 cases of the 85 returned surveys were dropped due to missing values exceeding 15%. Missing data points for the 109 quality of effort items, 10 environmental items and 25 estimate of gains items were replaced with the mean score for each item being measured. Additionally, a regression equation was developed to predict the 13 cases of missing SAT scores. Variables in the regression equation included gender, race, high school GPA and parental level of education. The R-square for the equation was .274.

In the second data source, institutional data (N=1170), a regression equation was also developed to predict the 31 cases of missing SAT scores. Variables in the regression equation included gender, race, high school GPA and college GPA. The R-square for the equation was .176. High school GPA scores reported on a 5-point scale were rescaled to

a 4-point scale and 37 cases of missing high school GPA scores were replaced with the mean high school GPA score.

Descriptive Statistics

The CSEQ measures student response to 109 college activity (Quality of Effort) items on a 4-point scale with a value of "1" representing "never" and a value of "4" representing "very often." The 10 environment items are measured on a 7-point scale, with a value of "1" indicating a "weak emphasis" and a value of "7" indicating a "strong emphasis." Satisfaction with college is measured on a four-point scale with a value of "1" indicative of "low satisfaction" and a value of "4" indicative of "high satisfaction." The 25 estimate of gain items are measured on a four-point scale, with a value of "1" representing "very little" and a value of "4" representing "very much."

Table 2 (p. 57) presents the range of scores, mean, standard deviation, and skewness and kurtosis values for each scale.[7] Gonyea et al. (2003) provide evidence in the CSEQ Norms Fourth Edition that scores on the CSEQ have good discrimination and variance. Having good discrimination and variance is important in the sense that questions are written to capture the variance in student behavior, meaning that not all students answer the questions in the same manner. Additionally, Gonyea et al. indicate that skewness and kurtosis values for each scale all fall between $\pm$1.0, within the generally accepted bounds of a normal distribution. George and Mallory (2006) propose

[7] Statistics are based upon assumptions of a normal distribution. The range of scores, mean, standard deviation, skewness and kurtosis provide information about the distribution of variables. The standard deviation measures variability around the mean. Skewness measures the extent to which a distribution of values deviates from symmetry around the mean. A value of zero represents an evenly balanced distribution, positive skewness indicates a greater number of smaller values and negative skewness indicates a greater number of larger values. Kurtosis is a measure of "peakedness" or "flatness" of the distribution. A value near zero indicates a normal distribution, a positive value indicates a more peaked distribution, and a negative value indicates a more flat distribution. (George and Mallery, 2006)

that values between ±2.0 are also acceptable values depending on the application. The majority of the skewness and kurtosis values fall within ±1.0, with the kurtosis value for emphasis on personal relations the only value that exceeds ±2.0.

Table 3 (p. 58) presents descriptive statistics for the institutional data set. The mean SAT score was 1144 and the mean high school GPA was 3.40. Skewness and kurtosis values for SAT and GPA fall within generally accepted bounds of a normal distribution.

Reliability Analysis

The CSEQ Norms for the Fourth Edition claims that factor analysis consistently produces 13 quality of effort, 3 environment, and 5 estimate of gain scales (Gonyea et al., 2003). Ideally, factor analysis would have been performed on the 109 quality of effort items, ten environment items and 25 estimate of gain items that comprised the CSEQ scales, and the results of this study would have replicated the scales reported in the CSEQ Norms for the Fourth Edition. However, the small sample size (N=72) precluded conducting factor analysis which would resemble established CSEQ scales or yield reliable results. Steven's (1986) warns that factor analysis conducted on a small sample size relative to the number of variables should be treated with considerable caution since it is unlikely that the results can be replicated. Gorsuch (1983) states "A present suggested absolute minimum ratio is five individuals per variable, but not less than 100 individuals per analysis" (p. 332). Employing Gorsuch's criterion, over 500 individuals would have been required to produce a reliable factor analysis on the 109 quality of effort items included in this study.

Thus, reliability analysis was only performed on the 13 quality of effort, 3 good practice indices, 3 environment, and 5 estimate of gain scales. Pedhazur and Schmelkin (1991) indicate that Cronbach's Alpha is generally the estimate of choice to measure

internal consistency estimates of reliability, or the degree to which items on a measure are measure are representative of the construct being measured. As previously discussed, an alpha of 0.70 or larger is generally accepted as a good measure of internal consistency. Lower alpha scores may be indicative that the scale is measuring multiple factors instead of one factor.

Cronbach's Alpha scores obtained in this study ranged from 0.78 to 0.93 for the quality of effort scales; from 0.82 to 0.91for the good practice indices; from 0.71 to 0.81 for the college environment scales; and from 0.77 to 0.85 for the estimate of gain scales, suggesting that these scales are a reliable indicator of what is being measured. Cronbach's Alpha scores are reported in tables 4 through 7 (pp. 59-67).

Table 2 Descriptive Statistics for CSEQ Scales

Variable	Variable Description	Range	Mean	Standard Deviation	Skewness	Kurtosis
Quality of Effort Scales						
Academic						
QElib	Library Experiences	8 to 32	17.61	5.04	0.31	-0.23
QEcomput	Computer and IT	9 to 36	23.00	5.17	0.31	-0.27
QEcourse	Course Learning	11 to 44	32.58	5.87	-0.27	-0.88
QEwrite	Writing Experiences	7 to 28	18.12	3.74	-0.27	0.00
QEsci	Science and Quantitative Experiences	10 to 40	19.67	7.39	1.23	1.56
Facilities/Organizations						
QEamt	Art, Music and Theater	7 to 28	16.73	5.19	0.46	-0.30
QEfacil	Campus Facilities	8 to 32	17.45	4.69	0.76	0.69
QEclubs	Clubs and Organizations	5 to 20	8.91	3.38	0.94	0.40
Personal and Interpersonal						
QEfac	Experiences with Faculty	10 to 40	22.61	6.52	0.71	-0.16
QEpers	Personal Experiences	8 to 32	21.16	5.48	-0.15	-0.62
QEstacq	Student Acquaintances	10 to 40	29.37	7.16	-0.12	-0.81
QEcontps	Topics of Conversations	10 to 40	26.77	5.54	-0.42	0.63
QEconinf	Information in Conversations	6 to 24	16.98	4.24	0.10	-0.59
Good Practices						
SFII	Student-Faculty Interaction	13 to 52	28.05	8.10	0.75	-0.13
CaSI	Cooperation among Students	9 to 36	25.03	5.47	-0.50	0.00
ALI	Active Learning	21 to 84	51.86	10.26	0.11	-0.48
College Environment Scales						
ENscholar	Scholarly	3 to 21	17.46	3.05	-1.24	1.95
ENpersrel	Personal Relations	3 to 21	16.75	3.16	-1.19	2.19
ENpractic	Practical	3 to 28	22.00	4.05	-0.95	0.98
OPINSCOR	Level of Satisfaction with College	2 to 8	6.20	1.59	-0.88	0.43
Estimate of Gains Scales						
GNpersdev	Personal Development	6 to 24	17.6	4.02	-0.45	-0.28
GNscitech	Science and Technology	4 to 16	8.86	3.14	0.54	-0.13
GNgened	General Education	6 to 24	17.10	3.59	-0.21	-0.09
GNvocprep	Vocational Preparation	3 to 12	8.43	2.16	-0.30	-0.13
GNintelsk	Intellectual Skills	6 to 24	18.17	3.65	-0.34	-0.32

Table 3 Descriptive Statistics for Institutional Data Set

Variable	Description	Number	Percent
Gender			
	Male	452	38.5
	Female	721	61.5
Ethnicity			
	White	446	38.0
	Non-White	629	53.6
	Not Reported	98	8.4
Year Enrolled			
	2001	284	
	2002	284	
	2003	302	
	2004	303	
Enrollment Status			
Enrolled	2001	161	56.7
	2002	157	55.3
	2003	191	63.2
	2004	261	86.1
	Total	**770**	**65.6**
Not Enrolled	2001	120	42.3
	2002	127	44.7
	2003	111	36.8
	2004	42	13.9
	Total	**400**	**34.1**
Learning Community Participant			
LLC Member	2001	25	8.8
	2002	23	8.1
	2003	20	6.6
	2004	21	7.0
	Total	**89**	**7.6**
Non-Member	2001	259	91.2
	2002	261	91.9
	2003	282	93.4
	2004	282	93.0
	Total	**1084**	**92.4**

	Range	Mean	St d. Deviation	Skewness	Kurtosis
SAT	740 to 1530	1144	126.05	0.19	-0.26
H.S. GPA	1.49 to 4.00	3.40	0.40	-0.92	0.92

Note.
Enrollment status represents student status as of January 2005.

Table 4 Quality of Effort Scales

Library a=**.82**

1) Used the library as a quiet place to read or study materials you brought with you
2) Found something interesting while browsing in the library
3) Asked a librarian or staff member for help in finding information on some topic
4) Read assigned material other than textbooks in the library (reserve readings, etc.)
5) Used an index or database (computer, card catalog, etc.) to find material on some topic
6) Developed a bibliography or reference list for a term paper or other report
7) Gone back to read a basic reference or document that other authors referred to
8) Made a judgment about the quality of information obtained from the library, World Wide Web, or other sources

Computer & Information Technology a=**.78**

1) Used a computer or word processor to prepare reports or papers
2) Used e-mail to communicate with an instructor or other students
3) Used a computer tutorial to learn material for a course or developmental/remedial program
4) Participated in class discussions using an electronic medium (e-mail, list-serve, chat group, etc.)
5) Searched the WWW or Internet for material related to a course
6) Used a computer to retrieve materials from a library not at this institution
7) Used to a computer to produce visual displays of information (charts, graphs, spreadsheets, etc.)
8) Used a computer to analyze data (statistics, forecasting, etc.)
9) Developed a Web page or multimedia presentation

Course Learning a=**.85**

1) Completed the assigned readings for a class
2) Took detailed class notes during class
3) Contributed to class discussions
4) Developed a role play, case study, or simulation for a class
5) Tried to see how different facts and ideas fit together
6) Summarized major points and information from your class notes or readings
7) Worked on a class assignment, project, or presentation with other students
8) Applied material learned in a class to other areas (your job or internship, other courses, relationships with friends, family, co-workers, etc.)
9) Used information or experience from other areas of your life (job, internship, interactions with others) in class discussions or assignments
10) Tried to explain material from a course to someone else (another student, friend, co-worker, family member)

11) Worked on a paper or project where you had to integrate idea from various sources

Writing Experiences a = **.78**

1) Used a dictionary or thesaurus to lookup the proper meaning of words
2) Thought about grammar, sentence structure, word choice, and sequence of ideas or points as you were writing
3) Asked other people to read something you wrote to see if it was clear to them
4) Referred to a book or manual about writing style, grammar, etc.
5) Revised a paper or composition two or more times before you were satisfied with it
6) Asked an instructor or staff member for advice and help to improve your writing
7) Prepared a major report for a class (20 pages or more)

Scientific and Quantitative Experiences a=**.93**

1) Memorized formulas, definitions, technical terms, and concepts
2) Used mathematical terms to express a set of relationships
3) Explained your understanding of some scientific or mathematical theory, principle or concept to someone else (classmate, co-worker, etc.)
4) Read articles about scientific or mathematical theories or concepts in addition to those assigned for a class
5) Completed an experiment or project using scientific methods
6) Practiced to improve your skill in using a piece of scientific equipment
7) Showed someone else how to use a piece of scientific equipment
8) Explained an experimental procedure to someone else
9) Compared the scientific method with other methods for gaining knowledge and understanding
10) Explained to another person the scientific basis for concerns about scientific or environmental issues (pollution, recycling, alternative sources of energy, acid rain) or similar aspects of the world around you

Art, Music and Theatre a=**.86**

1) Talked about art (painting, sculpture, artists, etc.) or the theater (plays, musicals, dance, etc.) with other students, friends, or family members
2) Went to an art exhibit/gallery or a play, dance, or other theater performance, on or off the campus
3) Participated in some art activity (painting, pottery, weaving, drawing, etc.) or theater event, or worked on some theatrical production (acted, danced, worked on scenery, etc.), on or off the campus
4) Talked about music or musicians (classical, popular, etc.) with other students, friends, or family members

5) Attended a concert or other music event, on or off the campus
6) Participated in some music activity (orchestra, chorus, dance, etc.), on or off the campus
7) Read or discussed the opinions of art, music, or drama critics

Campus Facilities a= **.78**

1) Used a campus lounge to relax or study by yourself
2) Met other students at some campus location (campus center, etc.) for a discussion
3) Attended a cultural or social event in the campus center or other campus location
4) Went to a lecture or panel discussion
5) Used a campus learning lab or center to improve study or academic skills (reading, writing, etc.)
6) Used campus recreational facilities (pool, fitness equipment, courts, etc.)
7) Played a team sport (intramural, club, intercollegiate)
8) Followed a regular schedule of exercise or practice for some recreational sporting activity

Clubs and Organizations a = **.80**

1) Attended a meeting of a campus club, organization, or student government group
2) Worked on a campus committee, student organization, or project (publications, student government, special event, etc.)
3) Worked on an off campus committee, organization, or project (civic group, church group, community event, etc.)
4) Met with a faculty member or staff advisor to discuss the activities of a group or organization
5) Managed or provided leadership for a club or organization, on or off the campus

Personal Experiences a= **.86**

1) Told a friend or family member why you reacted to another person the way you did
2) Discussed with another student, friend, or family member why some people get along smoothly, and others do not
3) Asked a friend for help with a personal problem
4) Read articles or books about personal growth, self-improvement, or social development
5) Identified with a character in a book, movie, or television show and wondered what you might have done under similar circumstances
6) Taken a test to measure your abilities, interests, or attitudes
7) Asked a friend to tell you what he or she really thought about you
8) Talked with a faculty member, counselor, or other staff member about personal concerns

Experiences with Faculty a = **.90**

1) Talked with your instructor about information related to a course you were taking (grades, make-up work, assignments, etc.)
2) Discussed your academic program or course selection with a faculty member
3) Discussed ideas for a term paper or other class project with a faculty member
4) Discussed your career plans and ambitions with a faculty member
5) Worked harder as a result of feedback from an instructor
6) Socialized with a faculty member outside of class (had a snack or soft drink, etc.)
7) Participated with other students in a discussion with one or more faculty members outside of class
8) Asked your instructor for comments and criticisms about your academic performance
9) Worked harder than you thought you could to meet an instructor's expectations and standards
10) Worked with a faculty member on a research project

Student Acquaintances a= **.93**

1) Became acquainted with students whose interests were different from yours
2) Became acquainted with students whose family background (economic, social) was different from yours
3) Became acquainted with students whose age was different from yours
4) Became acquainted with students whose race or ethnic background was different from yours
5) Became acquainted with students from another country
6) Had serious discussions with students whose philosophy of life or personal values were very different from you
7) Had serious discussions with students whose political opinions were very different from yours
8) Had serious discussions with students whose religious beliefs were very different from yours
9) Had serious discussions with students whose race or ethnic background was different from yours
10) Had serious discussions with students from a country different from yours

Conversations in Topics a=**.85**

1) Current events in the news
2) Social issues such as peace, justice, human rights, equality, race relations
3) Different lifestyles, customs, and religions
4) The ideas and views of other people such as writers, philosophers, historians

5) The arts (painting, poetry, dance, theatrical productions, symphony, movies, etc.)
6) Science (theories, experiments, methods, etc.)
7) Computers and other technologies
8) Social and ethical issues related to science and technology such as energy, pollution, chemicals, genetics, military use
9) The economy (employment, wealth, poverty, debt, trade, etc.)
10) International relations (human rights, free trade, military activities, political differences, etc.

Information in Conversations a**=.91**

1) Referred to knowledge you acquired in your reading or classes
2) Explored different ways of thinking about the topic
3) Referred to something one of your instructors said about the topic
4) Subsequently read something that was related to the topic
5) Changed your opinion as a result of the knowledge or arguments presented by others
6) Persuaded others to change their minds as a result of the knowledge or arguments you cited

Table 5 Good Educational Practice Indices

Student-Faculty Interaction Index a=**.91**

1) Talked with your instructor about information related to a course you were taking (grades, make-up work, assignments, etc.)
2) Discussed your academic program or course selection with a faculty member
3) Discussed ideas for a term paper or other class project with a faculty member
4) Discussed your career plans and ambitions with a faculty member
5) Worked harder as a result of feedback from an instructor
6) Socialized with a faculty member outside of class (had a snack or soft drink, etc.)
7) Participated with other students in a discussion with one or more faculty members outside of class
8) Asked your instructor for comments and criticisms about your academic performance
9) Worked harder than you thought you could to meet an instructor's expectations and standards
10) Worked with a faculty member on a research project
11) Met with a faculty member or staff advisor to discuss the activities of a group or organization
12) Asked an instructor or staff member for advice and help to improve your writing
13) Talked with a faculty member, counselor, or other staff member about personal concerns

Cooperation among Students Index a=**.82**

1) Met other students at some campus location (campus center, etc.) for a discussion
2) Worked on a campus committee, student organization, or project (publications, student government, special event, etc.)
3) Told a friend or family member why you reacted to another person the way you did
4) Discussed with another student, friend, or family member why some people get along smoothly, and others do not
5) Asked a friend for help with a personal problem
6) Asked a friend to tell you what he or she really thought about you
7) Asked other people to read something you wrote to see if it was clear to them
8) Worked on a class assignment, project, or presentation with other students
9) Tried to explain material from a course to someone else (another student, friend, co-worker, family member)

Active Learning Index a=**.89**

1) Found something interesting while browsing in the library
2) Asked a librarian or staff member for help in finding information on some topic
3) Read assigned material other than textbooks in the library (reserve readings, etc.)
4) Used an index or database (computer, card catalog, etc.) to find material on some topic
5) Developed a bibliography or reference list for a term paper or other report
6) Gone back to read a basic reference or document that other authors referred to
7) Contributed to class discussions
8) Tried to see how different facts and ideas fit together
9) Summarized major points and information from your class notes or readings
10) Applied material learned in a class to other areas (your job or internship, other courses, relationships with friends, family, co-workers, etc.)
11) Used information or experience from other areas of your life (job, internship, interactions with others) in class discussions or assignments
12) Worked on a paper or project where you had to integrate idea from various sources
13) Used a dictionary or thesaurus to lookup the proper meaning of words
14) Referred to a book or manual about writing style, grammar, etc.
15) Revised a paper or composition two or more times before you were satisfied with it
16) Asked an instructor or staff member for advice and help to improve your writing
17) Read articles or books about personal growth, self-improvement, or social development
18) Identified with a character in a book, movie, or television show and wondered what you might have done under similar circumstances
19) Taken a test to measure your abilities, interests, or attitudes
20) Searched the WWW or Internet for material related to a course
21) Used a computer to retrieve materials from a library not at this institution

Table 6 College Environmental Scales

Scholarly and Intellectual Emphasis a=**.76**

1) Emphasis on academic, scholarly, and intellectual qualities
2) Emphasis on critical, evaluative, and analytical qualities
3) Emphasis on aesthetic, expressive, and creative qualities

Vocational and Practical Emphasis a=**.71**

1) Emphasis on vocational and occupational competence
2) Emphasis on personal relevance and practical value of your courses
3) Emphasis on information literacy skills (using computers, other information resources)
4) Emphasis on understanding and appreciation for human diversity

Quality of Personal Relations a=**.81**

1) Relationships with faculty members
2) Relationships with administrative personnel and offices
3) Relationships with other students

Table 7 Estimate of Gains Scales

Gains in Personal Development a=**.84**

1) Developing the ability to get along with different kinds of people
2) Developing the ability to function as a member of a team
3) Understanding yourself, your abilities, interests, and personality
4) Developing your own values and ethical standards
5) Developing good health habits and physical fitness
6) Learning to adapt to change (new technologies, different jobs or personal circumstances, etc.)

Gains in Science and Technology a = **.85**

1) Understanding new developments in science and technology
2) Understanding the nature of science and experimentation
3) Becoming aware of the consequences (benefits, hazards, dangers) of new applications of science and technology
4) Analyzing quantitative problems (understanding probabilities, proportions, etc.)

Gains in Vocational Preparation a= **.77**

1) Acquiring knowledge and skills applicable to a specific job or type of work (vocational preparation)
2) Gaining a range of information that may be relevant to a career
3) Acquiring background and specialization for further education in a professional, scientific, or scholarly field

Gains in General Education a=**.77**

1) Broadening your acquaintance with and enjoyment of literature
2) Seeing the importance of history for understanding the present as well as the past
3) Gaining knowledge about other parts of the world and other people (Asia, Africa, South America)
4) Gaining a broad general education about different fields of knowledge
5) Developing an understanding of art, music, and drama
6) Becoming aware of different philosophies, cultures, and ways of life

Gain in Intellectual Skills a= **.82**

1) Writing clearly and effectively
2) Putting ideas together, seeing relationships, similarities, and differences between ideas
3) Learning on your own, pursuing ideas, and finding information you need
4) Thinking analytically and logically
5) Presenting ideas and information effectively when speaking to others
6) Using computers and other information technologies

Data Analysis

Quantitative Analysis

The six research questions developed for this study were analyzed using three statistical methods: Multivariate Analysis of Covariance (MANCOVA), Hierarchical Multiple Regression, and Logistic regression. Each research question and the accompanying statistical method will be explained in more detail in the following sections. Research questions one through four analyzed data obtained from the CSEQ. Research questions five and six analyzed institutional data.

Research Questions and Variables examined using MANCOVA

MANCOVA is used to test the main and interaction effects of independent variables on multiple dependent variables. "MANCOVA tests the differences in the centroid (vector) of means of multiple interval dependents, for various categories of the independent(s)" (Garson, 2006e). MANCOVA also allows the researcher to control for certain variables, called covariates that may affect the dependent variable. MANCOVA is similar to Analysis of Covariance (ANCOVA) except that MANCOVA compares the effect of multiple dependent variables. If MANCOVA detects significant multivariate effects between the groups, univariate tests are then conducted to examine individual differences for each dependent variable (Tabachnick and Fidell, 1983). Summarizing Stevens (1986), reasons for preferring multivariate analysis over a univariate method include the following:

1) The use of univariate tests leads to greatly inflated overall Type I error, i.e, the probability of rejecting the null hypothesis when it is true.
2) Univariate tests ignore correlations among variables.

3) Multivariate Analysis is more powerful in that it can detect differences of the combined variables which may not be present when variables are analyzed individually.

MANCOVA was used to examine research questions one, two and three. Dependent variables included the perception of environment scales, model 1; level of engagement with college activities (quality of effort scales), model 2; and self-reported academic and social gain scales, model 3. Independent variables for all MANCOVA models included place of residence (1 = Living-Learning Community, 2 = Residence Hall, and 3 = Off campus), Gender (0=Male, 1=Female), and Race (0=non-White, 1=White). The results of the MANCOVA analysis had the potential to show three significant main effects for place of residence, gender and race. Significant interaction effects between place of residence and gender; between place of residence and race; and, between gender, race and place of residence were possible . This study was primarily interested in the effect of place of residence and interactions of gender and race by place of residence; therefore, the two-way interaction between gender and race was not evaluated in this study.

Covariates included in all the MANCOVA models were high school grade point average (GPA), SAT score and parental level of education (0 = no college degree, 1 = one or both parents hold college degree). High school GPA and SAT score were used as a measure of previous student academic performance. Kruck and Lending (2003) state that research supports that standardized measures of aptitude, i.e., SAT scores, and previous academic performance, i.e., high school GPA, are indicators of academic performance. Parental level of education serves as a proxy for socioeconomic status. Research supports a strong correlation between years of education and socioeconomic status (Pascarella and Terenzini, 1991; Kupermintz, 1996). The commonly accepted

notion is that students from higher income families are better academically prepared for college.

Research Question 1 (Model 1): Do students in the three residential groups have differing perceptions about the college environment after one academic year?

MANCOVA was used to determine if place of residence, gender and race contributed to a mean difference in perceptions of the college environment and overall opinion of college. College environment scales included emphasis on: the scholarly environment; the vocational and practical environment; and, the student's personal relations. High school GPA, SAT score, and parental education level served as covariates.

Research Question 2 (Model 2a-2c): Do students in the three residential groups exhibit differing levels of engagement with campus resources and activities as measured on a variety of college activity and experience scales after one year?

MANCOVA was used to analyze if students' place of residence, gender and race contributed to different levels of engagement with campus resources and activities. Engagement with campus activities was measured by the thirteen quality of effort scales, comprised of 109 items on the CSEQ. Steven's (1986) writes that including all dependent variables into a single analysis without strong empirical or theoretical evidence may obscure differences that exist. Pace (1980) theoretically groups the 13 quality of effort scales into three clusters: academic and intellectual experiences; personal and interpersonal experiences; and use of group facilities and involvement in clubs and organizations. Three models utilizing Pace's theoretical groupings were created to assess whether mean differences in engagement with campus resources existed between the living groups: Model 2a - academic and intellectual experiences; Model 2b - personal

and interpersonal experiences; and, model 2c - use of group facilities and involvement in clubs and organizations.

The quality of effort scales of library experiences (QElib), computer and information technology (QEcomput), course learning (QEcourse), writing experiences (QEwrite) and science and quantitative experiences (QEsci) made up the academic and intellectual experiences cluster. Personal and interpersonal experiences included experiences with faculty (QEfac), personal experiences (QEpers), student acquaintances (QEstacq), topics of conversation (QEcontps) and information in conversations (QEconinf). The last cluster, use of group facilities and involvement in clubs and organizations was composed of the art, music and theater (QEamt), campus facilities (QEfacil) and clubs and organizations (QEclubs) quality of effort scales.

Research Question 3 (Model 3): Do students in the three residential groups evaluate their achievements on self-reported academic and social gain scales differently after one year?

MANCOVA was used to analyze if place of residence, gender and race contributed to a mean difference in perceived academic and social gains. Academic and social gains included: gains in personal development; gains in science and technology; gains in general education; gains in vocational preparation; and, gains in intellectual skills. High School GPA, SAT score, and parental education level served as covariates.

Research Questions and Variables examined using Regression Analysis

Multiple Regression Analysis allows the researcher to examine relationships that exist between variables. Multiple Regression assumes a linear relationship and allows a dependent variable to be predicted from a set of predictor or independent variables (Stevens, 1986). Multiple Regression also allows the researcher to hold constant or

control a variable, while observing the influence of other independent variables upon the dependent variable (DeMaris, 2004). Blocked Hierarchical Multiple Regression Analysis allows the researcher to specify *a priori* the sequence in which variables enter into the regression model, allowing the unique influence that each block of variables contributes towards predicting the dependent variable to be observed (Stevens, 1986; Lomax, 2001).

Research Question 4 (Model 4a-4e): What types of educational practices are associated with students' self-reported academic and social gains?

Blocked Hierarchical Multiple Regression Analysis was used to determine the amount of influence that each block of variables contributed towards predicting perceived academic and social gains. With one exception, variables entered into the regression equation in the order as suggested by the simplified version of Pascarella's causal model (see Figure 1, p. 52), as proposed by Kuh et al. (1997). Place of residence, considered an environmental variable, entered into the model as a separate block in order to determine the specific relationship of place of residence to academic and social gains.

Dependent variables included the five self-reported academic and social gain scales: gains in personal development; gains in science and technology; gains in general education; gains in vocational preparation; and, gains in intellectual skills.

Independent variables for model 4a through 4e included student background variables, perception of environment, good practice indices and place of residence. Three dummy variables[8] representing gender, race and parent level of education were included in the model. Two additional dummy variables were created to represent place of residence. The first dummy variable (LLC) denoted membership in the living-learning

[8] Dummy Variables take on the value of 0 or 1 and represent categorical data such as gender, enrollment status, college graduate, etc.) The use of dummy variables allows information about a qualitative variable to be included in a regression model without imposing measurement assumptions on the categorical variable (Hardy, 1993). In the case of gender, "0" may be assigned to represent males and "1" may be assigned to represent females.

community. The second dummy variable (off campus) represented students who resided off campus. Living in a traditional residence hall served as the reference variable. The independent variables were included in the model in blocks, allowing the affiliation of each group of variables on the dependent variable to be determined.

Block 1 – Student Background Variables	
Gender	(0 = Male, 1 = Female)
Race	(0 = non-White, 1 = White)
SAT Score	
High School GPA	
Parent Education Level	(0 = no college degree, 1 = one or both parents hold college degree)
Block 2 – Perception of Environment	
Scholarly and Intellectual Emphasis	
Vocational and Practical Emphasis	
Quality of Personal Relations	
Opinion of College Score	
Block 3 – Good Practice Indices	
Student-Faculty Interaction Index	
Cooperation among Students Index	
Active Learning Index	
Block 4 – Place of residence	
Living Learning Community (LLC)	(0 = non LLC member, 1 = LLC)
Off campus	(0 = on campus, 1 = off campus)

For all models, the first block of variables entered into the regression model represented student background characteristics, allowing the amount of variance attributed to these variables to be determined. The second block of variables included the environmental scales, representing student perceptions about the college environment. The addition of the environment scales allowed their influence to be determined while controlling for the influence of student characteristics. The third block of variables

entered represented college activities, allowing the contribution of good educational practices in predicting the gain scales to be determined while controlling for the influence of environment and student background variables. The fourth block entered was student place of residence to determine if place of residence was a significant predictor of college gains. Student background and place of residence were forced into the regression models regardless of whether they were a significant predictor or not in order to account for their influence on perceived academic and social gains. The environment scales and good educational practice indices entered into the regression equation in a stepwise manner based whether they were a significant predictor at $p = < .10$.[9]

Research Question 5 (Model 5): Do students who participate in the living-learning community exhibit higher grade point averages?

Model 5 analyzed four years of grade point average data provided by the institution. Blocked Hierarchical Multiple Regression Analysis was used to determine the relationship of each variable on student grade point average. The dependent variable was current college grade point average, based upon a four point scale. Independent variables included student background characteristics and place of residence.

[9] Stevens (1986) indicates that sample size (n) and the number of predictor variables (k) are two critical factors in determining whether an equation can be generalized to other samples. He indicates a greater loss of predictive power when the sample size is small relative to the number of predictor variables. Steven's indicates the estimated predictive power based on the ratio (n/k) of sample size (n) and number of predictive variables (k) is small for a 5:1 ratio, moderate for 10:1 ratio and fairly large for a 15:1 ratio. (p.81). Given the small sample size (n=72), this study aimed for 10 subjects per predictor variable. To achieve this, student background and place of residence were forced into the regression model and the environment scales and good educational practice indices entered the regression equation in a stepwise manner. With this approach, attempts were made to control the number of predictor variables relative to the sample size.

Dummy variables representing gender, race, and place of residence[10] were created for the analysis.

Block 1 – Student Background Variables

SAT score	
High School GPA	
Gender	(Male = 0, Female = 1)
Race	(non-White =0, White = 1)
Number of Years Enrolled	

Block 2 – Place of Residence

Living-Learning Community	(non-LLC = 0, LLC = 1)

The variables representing student background characteristics were entered into the regression equations first to determine the amount of variance explained. Student place of residence was entered in the second block, allowing the influence of membership in the living-learning community to be determined while accounting for the influence of student background characteristics.

Research Questions and Variables examined using Logistic Regression Analysis

Logistic Regression was used to determine if participation in a living-learning community was a predictor of retention. "Generally, logistic regression is well suited for describing and testing hypothesis about relationships between a categorical outcome variable and one or more categorical or continuous predictor variables" (Peng, Lee, and Ingersoll, p.4, 2002). Logistic Regression predicts the probabilities of retention occurring. "Logistic Regression has many analogies to OLS regression: logit coefficients correspond to *b* coefficients in the logistic regression equation, the

[10] The institutional data set only identified members of the Living-learning community. If the student was not a member of the living-learning community the data did not differentiate between students who lived on campus in a residence hall and student who lived off-campus.

standardized logit coefficients correspond to beta weights, and a pseudo R^2 statistic is available to summarize the strength of the relationship" (Garson, p. 1, 2006a).

Research Question 6 (Model 6): Are students who participate in the Living-learning Community retained at higher rates than non-participants?

Logistic regression analysis was used to determine the relationship between each independent variable and student retention. Model 6 analyzes four years of data provided by the site institution. The dependent variable was coded 1 = currently enrolled or 0 = not enrolled. Three students had graduated and were considered as being successfully retained. None of the three students had participated in the living-learning community. The independent variables included:

Block 1 – Student Background Variables

SAT score	
High School GPA	
Gender	(Male = 0, Female = 1)
Race	(Non-White =0, White = 1)
College GPA	

Block 2 – Place of Residence

Living-Learning Community	(non-LLC = 0, LLC = 1)

The variables representing student background characteristics were entered first into the model to determine the amount of variance explained. Student place of residence was entered in the second block. The order that variables entered the model allowed the researcher to determine if participation in a living-learning community was a significant predictor of retention while accounting for the influence of student background characteristics.

INTERPRETATION OF STATISTICAL ANALYSES

An alpha of .10 was used to determine statistical significance for models in this study. There are two kinds of errors that can be made in significance testing: A type I error, denoted by alpha, is the probability of rejecting the null hypothesis when it is really true, i.e., indicating that group means differ when they do not. A type II error, denoted by ß, is the probability of accepting the null hypothesis when it is false, i.e., indicating that group means are the same when they are different. Due to the small sample size, this study had low statistical power, and an alpha of .10 is appropriate in studies with high type II error. Selection of a more liberal alpha improves power and can be of benefit to studies with a small sample size (Cohen, 1966; Steven's, 1986).[11] It should be noted, however, that the selection of a more liberal alpha in this study also increases the risk of a type I error.

The MANCOVA models examined main effects for place of residence, gender and race to determine if there were significant differences in mean score among the groups. The models also tested two-way interactions between gender and place of residence, race and place of residence, and the three-way interaction between gender, race and place of residence. Wilk's Lambda was examined with F-ratios reported to test the null hypothesis that no differences existed between the groups. (Greer and Mulhern, 2002) If the multivariate test for the main effects or interaction yielded a significant F-ratio, univariate tests with Bonferroni casewise analyses were conducted for each variable

[11] "The power of a statistical test is the probability that it will yield statistically significant results" (Cohen, 1969, p. 1). Cohen (1969) indicates that appropriate probability standards must be used in order to make a valid statistical inference. The four elements involved in statistical tests include d, a, ß and N. d refers to effect size, or difference between means; a refers to Type I error; ß refers to Type II error; and, N refers to sample size. Cohen states that consideration of the consequences of Type I and Type II error must be considered when determining desired power values and significance criteria . Cohen (1969) indicates that "if a is made vanishingly small, power becomes quite small. Similarly, if ß is made very small (desired power becomes very large). Other things being equal, required sample size becomes very large" (p. 53).

to determine the specific dependent variables that contributed to the significant overall effect. The assumptions of homogeneity of variance and covariance were also explored and results were satisfactory for all MANCOVA models except model 2b. The implications of not meeting the assumptions of homogeneity of variance and covariance will be discussed with results of model 2b.

Consistent with recommendations of the American Psychological Association, effect size information was reported. Partial Eta squared (η_p^2) is a measure of effect size, or how much of the total variance (effect size plus error) that is attributable to the main effect, interaction or covariate (Becker, 1998). A partial Eta squared value of .02 indicates a small effect size, .15 indicates a medium effect size and .35 indicates a large effect size (Cohen, 1988). In the Blocked Hierarchical Multiple Regression models, the effect size was measured by the standardized beta coefficients and by the R-square. Employing Cohen's (1988) effect size definition for regression coefficients, an R-square value of .01 indicates a small effect size, .09 indicates a medium effect size and .25 indicates a large effect size.

In multiple regression, the beta coefficients reflect the unique contribution of each dependent variable, the R-square reflects the combined contributions of the independent variables in explaining the dependent variable, and the F test measures the significance of the regression model as a whole (Garson, 2006b). Standardized beta coefficients[12] are reported in order to allow comparison between variables. The standardized beta coefficient is the average amount the dependent variable increases when the independent variable increases one standard deviation and the other independent variables are held constant. (DeMaris, 2004). Adjusted R-Square is reported because R-square coefficients

[12] "The standardized coefficient is equal to the unstandardized coefficient times the ratio of the standard deviation of X_k to the standard deviation of Y. This standardization removes the dependence of b_k on the units of measurement of X_k and Y" (Demaris, 2004, 91).

may be overestimated in data sets with small sample size relative to the number of predictor variables (Steven's, 1986). For each block of new variables added to the model, the R-square coefficient, the change in R-square coefficient and significance of the change in the F-value was reported to determine the contribution of the block of variables to the overall R-square coefficient. (Garson, 2006b).

In the Blocked Hierarchical Logistic Regression model the Wald test, the Log Likelihood test, the Hosmer-Lemeshow Goodness of Fit test, and the pseudo R-square are statistical measures used to determine the significance of coefficients in the model and the overall fit of the model. The Wald statistic was examined to determine the significance of each independent variable. The exponent of the coefficient [(Exp(B)] indicates the odds-ratio for the independent predictor variable. The log-likelihood ratio was analyzed to determine if the independent variables were significant in explaining retention. The log-likelihood ratio reflects the odds that the observed values of the dependent variable may be predicted from the observed values of the independent variables (Garson, 2006a). Chi-square is used to statistically test the log-likelihood ratio, analogous to producing an increment in R-square in Hierarchical Regression (Brannic, 2000). For each block of new variables entered into the equation, Chi-square values were examined to determine whether the variables entered could significantly predict the outcome and whether the block of variables significantly increased the fit of the model. The Hosmer-Lemeshow Goodness Of Fit test for model 6, expressed as a Chi-square value, was non-significant implying that the model adequately fits the data (Garson, 2006a).

Qualitative Analysis

During the Spring 2005 semester qualitative individual interviews were conducted with participants from each of the three living arrangements. Cassell and Symon (1994) state that qualitative research interview is less restrictive than quantitative research, and that it allows the researcher to examine possible explanations or processes involved in an observed quantitative phenomena. Thus, the qualitative interviews provided insight and potential explanation into the statistical findings. King (1994) writes that the goal of any qualitative research interview is to see the research topic from the perspective of the interviewee, and understand how and why he or she comes to have this perspective. King (1994) indicates that qualitative research interviews are appropriate where individual perceptions of processes within a social unit are to be studied prospectively. King's model for conducting qualitative research is summarized below:

1) Define the Research Questions – Research questions for this study were adapted from "Educating the Best and the Brightest: Collegiate Honors Programs and the Intellectual, Social and Psychological Development of Students (Shushok, 2002)
2) Create the interview guide – King (1994) indicates that the interview guide lists topics which the interviewer should attempt to explore. The interview guide for this study included the initial set of questions, plus follow-up or probing questions that the researcher asked to further explore each topic. Two cognitive interviews were conducted to test the research questions prior to conducting the individual interviews (see Appendix D).
3) Recruit the participants - To conduct the individual interviews, students were invited to participate in an hour-long interview. Four of the seven participants were male, and three of the seven participants were non-white.

4) Carry out the interviews - The individual interviews were conducted in a campus facility and lasted approximately 60-minutes in length. Participants were again reminded that participation was voluntary and that responses would be confidential. Participants were provided with written information about the study and asked to sign a consent waiver prior to participating in the interview. The researcher established an informal, conversational mood for the interview. King (1994) states, "The interviewee is seen as a 'participant' in the research, actively shaping the course of the interview rather than passively responding to the interviewer's pre-set questions" (p. 15).

The qualitative interviews provide information in the student voice to further examine the findings of this study. The interview sessions were tape recorded, transcribed and examined for common themes. Relevant student comments were then categorized under a thematic heading, i.e., faculty interaction, involvement, peers, etc. The themes were organized into a database, sorted and reported in the discussion section of this study. For emphasis student quotes were *italicized* when referenced in the discussion section of this study. Interview participants were also assigned the following pseudonyms:

Pseudonym	Place of Residence
Alberto	Off campus
Felipe	Off campus
Gloria	Living-Learning Community
Jake	Residence Hall
Pete	Residence Hall
Sarah	Living-Learning Community
Suzy	Living Learning Community

SUMMARY

Chapter three presented the research method used in this study. This included a description of the research instrument, data collection procedures, data preparation procedures and method of data analyses. The conceptual model upon which this study was based was also introduced. Additionally, descriptive statistics for the CSEQ and institutional data bases used for the study were reported. Results of the data analyses are presented in the next chapter.

CHAPTER IV

Results

The purpose of this research was to investigate whether a student's place of residence was associated with various student outcomes. The previous chapter identified methods used to examine the research questions. This chapter presents analysis of data collected from the study and addresses the six research questions outlined in the preceding chapter. The analysis uses data from the College Student Experiences Questionnaire (research questions 1, 2, 3 and 4) and institutional data on academic performance and retention of all students who were enrolled in the university between the years 2001 through 2004 (research questions 5 and 6). Qualitative data is reported in chapter 5 to support findings from the quantitative analyses. Multivariate Analysis of Covariance (MANCOVA), Blocked Hierarchical Regression and Blocked Hierarchical Logistic Regression were used to investigate the research questions. The following section presents results for the six analytical models (see to pages 70 to 76 to review the models).

MODEL 1

For Model 1, a MANCOVA analysis was conducted to examine the relationship of place of residence, gender and race on student perception of the college environment and their overall level of satisfaction with the college experience. Statistically significant effects for place of residence (Wilks' Lambda = $F(8, 108)=2.86$, $p=.006$) and the three way interaction between residence, gender and race (Wilks' Lambda = $F(8, 108)=2.91$, $p=.005$) were found (see Table 8, p.86). The effect size (*ES*) as indicated by the partial

eta squared value was 17.5 percent for place of residence and 17.8 percent for the three-way interaction. Main effects for gender and race, and interactions between gender and race with place of residence were non-significant.

Univariate analysis indicated place of residence was significantly associated with students' perception of the scholarly (F=3.59, p=.034, ES=.112) and the practical environments (F=8.11, p=.001, ES=.222). The effect of the SAT covariate was significant at the p<.10 significance level for the scholarly and practical environment. There were no significant differences detected in how students in the three living areas perceived the personal relationship environment or in their overall satisfaction with the college.

Bonferroni Casewise Analysis of the perception of the scholarly environment indicated that there was no significant difference in perception between students who participated in the living-learning community and students who lived in the residence hall or off campus. However, a significant difference was found between students who lived in a residence hall and students who lived off campus at the p<.05 significance level. The mean of the residence hall group (M=18.47, SE=.69) was significantly higher than the mean for the off campus group (M=16.02, SE=.66) (See table 9, p. 87).

Bonferroni Casewise Analysis of the practical environment indicated a significant difference in perception between students who resided in the living-learning community and students who lived off campus at the p<.05 significance level. The mean for the living-learning community group (M=23.03, SE=1.43) was significantly higher than the mean for the off campus group (M=18.85, SE=.90). A significant difference in perception was also found between students who live in a residence hall and students who live-off campus at the p<.001 significance level. The mean for the residence hall group (M=23.89, SE=.95) was significantly higher than the mean for the off campus group

(M=18.86, SE=.90). There was no significant difference found between students who resided in the living-learning community and students who resided in the residence hall. Marginal means for model 1 estimated by place of residence are reported in table 9, p. 87.

Significant three-way interaction effects between gender, race and place of residence were also detected at the $p<.10$ significance level for perception of personal relations environment and at the $p<.05$ significance level for perception of the practical environment. (see Table 8, p. 86) The results of the three-way interactions suggest that students' place of residence, gender and race do not lead to consistent perceptions of the personal relations and practical environments.

For perceptions of the personal relations environment, White males residing in the LLC and off campus exhibited higher perceptions of the personal relations environment than non-white males in the same type living environment whereas non-White males in the residence hall group exhibited higher levels of perception than White males in the residence hall group. For females, non-White females residing in all three living groups exhibited higher perceptions of the personal relations environment than White females in the same type living environment. White males in the LLC reported the highest level of perception of the personal relations environment among all groups.

For perceptions of the practical environment, White males residing in the LLC and off campus exhibited higher perceptions of the practical environment than non-white males in the same type living environment whereas non-White males in the residence hall group exhibited higher levels of perception than White males in the residence hall group. Non-White females residing in the LLC and off campus groups exhibited higher perceptions of the personal relations environment than White females in the same type living environment. White females in the residence hall group reported higher perceptions that non-white females in the residence halls. Non-White males in the

residence hall reported the highest level of perception of the practical environment among all groups. Marginal means estimated by gender, race and place of residence are reported in table 10, p. 88.

Table 8 MANCOVA Analysis for Perception of College Environment

Model 1	**Multivariate Analysis**		**Univariate Analysis**							
			ENscholar		ENpersrel		ENprac		Satisfaction	
Effect	F	$?_p^2$	F	$?_p^2$	$?_p^2$	$?_p^2$	F	$?_p^2$	F	$?_p^2$
Residence	2.86 ***	.175	3.59 **	.112	1.67	.056	8.11 ****	.222	1.96	.065
Gender	0.48	.034	0.01	.000	0.48	.008	0.23	.004	0.09	.002
Race	1.58	.105	0.01	.000	0.76	.013	1.24	.021	0.44	.008
Res X G	0.99	.069	0.34	.012	0.51	.018	0.53	.018	1.20	.041
Res X R	1.57	.105	0.73	.025	1.38	.046	1.22	.041	0.20	.007
Res X G X R	2.91 ***	.178	0.91	.031	2.60 *	.084	4.55 **	.138	0.16	.006

Note. Wilks' Lambda reported
* = p <.10 ** = p <.05 *** = p <.01 **** = p <.001

Table 9 Perception of Environment: Marginal Means Estimated by Place of Residence

Dependent Variable	Residence	Mean	Std. Error	90% Confidence Interval	
				Lower Bound	Upper Bound
ENFscholar	LLC	18.003[a]	1.039	16.266	19.740
	residence hall	18.470[a]	.690	17.316	19.623
	off-campus	16.021[a]	.658	14.922	17.121
ENFpersrel	LLC	17.477[a]	1.086	15.661	19.293
	residence hall	17.712[a]	.721	16.506	18.918
	off-campus	15.984[a]	.687	14.835	17.134
ENFprac	LLC	23.034[a]	1.427	20.647	25.421
	residence hall	23.894[a]	.948	22.309	25.480
	off-campus	18.857[a]	.904	17.347	20.368
opinscor	LLC	6.928[a]	.567	5.980	7.875
	residence hall	5.963[a]	.376	5.334	6.592
	off-campus	5.612[a]	.359	5.012	6.211

a. Covariates appearing in the model are evaluated at the following values: SAT=1191.40, HSGPA = 3.46, Parental Education Level = .65.

Table 10 Perception of Environment: Marginal Means Estimated by Gender, Race and Place of Residence

Dependent Variable	Residence	Gender	Race	Mean	Std. Error	90% Confidence Interval	
						Lower Bound	Upper Bound
ENFscholar	LLC	Male	non-white	16.034 [a]	2.060	12.590	19.479
			white	19.832 [a]	2.979	14.851	24.813
		female	non-white	18.079 [a]	1.332	15.853	20.306
			white	18.067 [a]	1.472	15.606	20.527
	residence hall	Male	non-white	19.701 [a]	2.072	16.238	23.165
			white	18.128 [a]	1.339	15.889	20.367
		female	non-white	18.244 [a]	1.043	16.499	19.989
			white	17.806 [a]	.763	16.530	19.083
	off-campus	Male	non-white	15.091 [a]	1.191	13.099	17.082
			white	16.266 [a]	1.517	13.729	18.803
		female	non-white	17.575 [a]	.795	16.245	18.905
			white	15.153 [a]	1.704	12.305	18.002
ENFpersrel	LLC	Male	non-white	14.564 [a]	2.153	10.963	18.164
			white	21.684 [a]	3.114	16.477	26.891
		female	non-white	17.760 [a]	1.392	15.432	20.087
			white	15.900 [a]	1.539	13.328	18.472
	residence hall	Male	non-white	19.461 [a]	2.166	15.839	23.082
			white	17.276 [a]	1.400	14.935	19.616
		female	non-white	17.231 [a]	1.091	15.407	19.055
			white	16.881 [a]	.798	15.547	18.215
	off-campus	Male	non-white	13.771 [a]	1.245	11.689	15.853
			white	17.640 [a]	1.586	14.988	20.292
		female	non-white	16.833 [a]	.831	15.443	18.224
			white	15.694 [a]	1.781	12.716	18.672
ENFprac	LLC	Male	non-white	21.100 [a]	2.831	16.368	25.833
			white	24.990 [a]	4.094	18.146	31.835
		female	non-white	23.274 [a]	1.830	20.215	26.334
			white	22.771 [a]	2.022	19.389	26.152
	residence hall	Male	non-white	28.353 [a]	2.847	23.593	33.113
			white	21.665 [a]	1.840	18.588	24.742
		female	non-white	22.456 [a]	1.434	20.058	24.854
			white	23.104 [a]	1.049	21.350	24.858
	off-campus	Male	non-white	18.246 [a]	1.637	15.509	20.983
			white	19.084 [a]	2.085	15.598	22.570
		female	non-white	22.729 [a]	1.093	20.901	24.556
			white	15.370 [a]	2.341	11.456	19.285
opinscor	LLC	Male	non-white	6.982 [a]	1.123	5.103	8.860
			white	7.992 [a]	1.625	5.275	10.708
		female	non-white	6.561 [a]	.726	5.347	7.775
			white	6.176 [a]	.803	4.834	7.518
	residence hall	Male	non-white	4.502 [a]	1.130	2.613	6.392
			white	6.597 [a]	.730	5.375	7.818
		female	non-white	6.694 [a]	.569	5.743	7.646
			white	6.060 [a]	.416	5.364	6.756
	off-campus	Male	non-white	4.481 [a]	.650	3.395	5.568
			white	5.980 [a]	.827	4.597	7.364
		female	non-white	6.695 [a]	.434	5.969	7.420
			white	5.290 [a]	.929	3.736	6.843

a. Covariates appearing in the model are evaluated at the following values: SAT = 1191.40, HSGPA = 3.46, Parental Education Level = .65.

MODELS 2A-C

Models 2a through 2c examined the relationship of place of residence, gender and race on students' quality of effort on a variety of college experiences and activities. The 13 quality of effort scales were broken into three models based on Pace's (1980) theoretical groupings. Model 2a examined quality of effort scales associated with academic and intellectual experiences. Model 2b examined quality of effort scales related to personal and interpersonal experiences. Model 2c examined quality of effort scales linked with the use of group facilities and involvement in clubs and organizations.

Model 2a examined students' quality of effort on academic activities by place of residence, gender and race. The main effects of place of residence (Wilks'Lambda = $F(10,106)=0.80$, $p=.629$), gender (Wilks' Lambda = $F(5,53)=1.43$, $p=.227$), and race (Wilks' Lambda = $F(5, 53)=0.01$, $p=1.00$) were not significant. Covariates and interactions for the model were also non-significant. The lack of main effects or interaction effects suggests that there is no mean difference in reported engagement in academic activities and experiences between students by place of residence, by gender or by race. The null hypothesis was retained and the follow-up univariate analysis was not conducted.

Model 2b (see Table 11, p.93) examines the relationship of students' quality of effort regarding personal and interpersonal experiences with faculty (QEfac), student acquaintances (QEstacq), personal experiences (QEpers), topics of conversations (QEcontps) and information conveyed in conversations (QEconinf). Caution must be exercised in interpreting the results of model 2b. As reported earlier the assumption of homogeneity of variance and covariance for model 2b was not met. "The assumption is that variance-covariance matrices within each cell are sampled from the same population

variance-covariance matrix" (Tabachnick and Fidell, 1983, p. 232). Tabachnick and Fidell (1983) state if sample sizes are unequal and Box's M test leads to a rejection of the assumption of homogeneity of variance and covariance, then robustness of the model is not guaranteed leading to possible Type I errors. They indicate that not meeting the assumption of homogeneity of variance and co-variance reduces the power of the MANCOVA. Use of Pillai's trace instead of Wilks' Lambda may improve robustness and is reported for model 2b.

The main effects of place of residence (Pillai's Trace = $F(10,108)=1.47$, $p= .158$), gender (Pillai's Trace = $F(5, 53)=0.97$, $p=.443$), and race (Pillai's Trace = $F(5, 53)=0.98$, $p=.445$) indicate that the main effects was not significant. The interaction effect of place of residence and race, however, indicated a significant effect at the $p<.10$ significance level (Pillai's Trace = $F(10,108)=1.88$, $p=.054$, $ES=.149$). The effect size explaining 14.9 percent of the total variance is a moderate effect size. Interaction effects for place of residence and gender, and the three-way interaction between gender, race and residence were non-significant. Covariates for the model were non-significant.

Univariate analysis indicated a significant place of residence effect for the personal experiences scale (QEpers) ($F=3.46$, $p=.038$, $ES=.108$) with the residence hall group (M=22.27, SE=1.26) exhibiting a significant mean difference in perceptions of personal experiences over students who lived off campus (M=17.99, SE=1.20) (see Table 12, p. 94). There was no significant difference in perceptions of personal experiences found between students who resided in the living-learning community and students who resided in a residence hall or off campus. Although a significant place of residence effect was only reported for the personal experiences scales (QEpers), a review of marginal means estimated by residence (see table 12) indicates that the residence hall group

exhibited higher mean scores on all of the personal and interpersonal scales. The higher mean scores, however, could be due to sampling error.

A significant gender effect was also detected for the topics of conversation scale (F=4.55, p=.037, ES =.074) (See table 11, p.93). Female students (M=26.69, SE=.89) reported higher levels of effort with regard to topics of conversations than males (M=23.07, SE=1.46). Although a significant gender effect was only reported for the topics of conversation scale, a review of marginal means estimated by gender (see table 13, p. 94) indicates that females exhibited higher mean scores on all of the personal and interpersonal scales.

Univariate analysis also indicated a significant place of residence and gender interaction for topics of conversation (QEcontps) (F = 2.79, p = .070, ES = .089), and a significant place of residence and race interaction for the information in conversations (QEconinf) (F=3.32, p=.043, ES =.105). The three way interaction between gender, race and residence indicated significant effects for topics of conversation (QEcontps) (F=2.49, p=.091, ES=.081) and for information in conversations (QEconinf) (F=2.76, p=.071, ES=.088).

The interaction between place of residence and gender (see Table 15, p. 96 & Figure 2, p. 99) for topics in conversations (QEcontps) shows intersecting lines, indicating that membership in a particular residence or gender group does not guarantee consistent levels of effort with regards to topics of conversations. Females in the living-learning community and residence hall exhibited higher level of effort than on campus males, with women in the residence halls exhibiting the highest levels of effort. However, off campus males exhibited higher levels of effort with regard to topics of conversation than did female students who live off campus. Off campus males also exhibited the highest level of effort among all males.

The interaction between place of residence and race (see Table 16, p. 97 & Figure 3, p.100) for information in conversations (QEconinf) also shows intersecting lines, indicating that membership in a particular residence or race group does not indicate consistent effort with regard to information in conversations. In general, White students who lived on campus reported exhibiting greater levels of effort than did non-White students who lived on campus. Whereas off campus White students reported exhibiting lower levels of effort than non-White students who lived off campus.

The three-way interactions for topics of conversation (QEcontps) indicates that non-White males exhibit higher levels of effort than White males, and all males regardless of place of residence exhibited lower levels than females. White females who lived in the LLC and in the Residence hall also reported exhibiting higher levels of effort with regards to information than non-White females, whereas off campus non-White females exhibited higher levels than white females (see Table 17, p.98). The three-way interactions for topics of conversation (QEconinf) reveals similar results except White males who reside in the residence hall reported exhibiting higher levels of effort for topics of conversation than non-white males (see Table 17, p.98). The three-way interactions indicate that a students' place of residence, gender or race do not guarantee consistent effort for topics of conversation or information in conversations.

Table 11 Quality of Effort Scales: Personal Relationships

Model 2b	**Multivariate Analysis**		**Univariate Analysis**									
			QEfac		QEpers		QEstacq		QEcontps		QEconinf	
Effect	F	$?_p^2$	F	$?_p^2$	F	$?_p^2$	F	$?_p^2$	F	$?_p^2$	F	$?_p^2$
Residence	1.47	.120	0.67	.023	3.46 **	.108	1.59	.053	1.84	.060	1.23	.041
Gender	0.97	.084	0.68	.012	2.71	.046	1.78	.030	4.55 **	.074	2.22	.038
Race	0.98	.085	0.01	.000	1.83	.031	2.69	.045	1.97	.034	1.00	.017
Res X G	1.29	.107	0.58	.020	1.11	.038	1.97	.065	2.79 *	.089	2.16	.071
Res X R	1.88 *	.149	0.01	.000	1.42	.047	0.35	.012	1.75	.058	3.32 **	.105
Res X G X R	1.00	.085	2.10	.069	2.35	.076	0.93	.032	2.49 *	.081	2.76 *	.088

Note. Pillai's Trace reported
* = p <.10 ** = p <.05 *** = p <.01 **** = p <.001

Table 12 Quality of Effort: Marginal Means Estimated by Place of Residence

Dependent Variable	residence	Mean	Std. Error	90% Confidence Interval	
				Lower Bound	Upper Bound
QEFfac	LLC	19.807[a]	2.294	15.971	23.643
	residence hall	22.955[a]	1.524	20.408	25.503
	off-campus	21.830[a]	1.452	19.402	24.259
QEFpers	LLC	18.128[a]	1.901	14.948	21.307
	residence hall	22.266[a]	1.263	20.155	24.378
	off-campus	17.991[a]	1.203	15.979	20.004
QEFstacq	LLC	26.856[a]	2.636	22.449	31.263
	residence hall	31.068[a]	1.750	28.141	33.995
	off-campus	27.175[a]	1.668	24.385	29.964
QEFcontps	LLC	22.558[a]	1.875	19.423	25.693
	residence hall	26.809[a]	1.245	24.727	28.891
	off-campus	25.288[a]	1.187	23.303	27.272
QEFconinf	LLC	16.023[a]	1.416	13.655	18.391
	residence hall	16.449[a]	.941	14.877	18.022
	off-campus	14.484[a]	.897	12.985	15.983

a. Covariates appearing in the model are evaluated at the following values: SAT = 1191.40, HSGPA = 3.46, Parental Education Level = .65

Table 13 Quality of Effort: Marginal Means Estimated by Gender

Dependent Variable	gender	Mean	Std. Error	90% Confidence Interval	
				Lower Bound	Upper Bound
QEFfac	Male	20.673[a]	1.790	17.680	23.667
	female	22.388[a]	1.090	20.566	24.211
QEFpers	Male	18.042[a]	1.484	15.561	20.523
	female	20.881[a]	.903	19.371	22.392
QEFstacq	Male	26.771[a]	2.057	23.332	30.210
	female	29.962[a]	1.252	27.868	32.055
QEFcontps	Male	23.072[a]	1.463	20.626	25.519
	female	26.698[a]	.891	25.208	28.187
QEFconinf	Male	14.695[a]	1.105	12.847	16.543
	female	16.609[a]	.673	15.484	17.734

a. Covariates appearing in the model are evaluated at the following values: SAT = 1191.40, HSGPA = 3.46, Parental Education Level = .65.

Table 14 Quality of Effort: Marginal Means Estimated by Race

Dependent Variable	race	Mean	Std. Error	90% Confidence Interval	
				Lower Bound	Upper Bound
QEFfac	non-white	21.472[a]	1.339	19.233	23.711
	white	21.589[a]	1.691	18.761	24.418
QEFpers	non-white	20.697[a]	1.110	18.842	22.552
	white	18.227[a]	1.402	15.883	20.570
QEFstacq	non-white	30.440[a]	1.538	27.868	33.012
	white	26.293[a]	1.943	23.044	29.542
QEFcontps	non-white	26.149[a]	1.094	24.320	27.979
	white	23.621[a]	1.382	21.309	25.932
QEFconinf	non-white	16.332[a]	.827	14.950	17.715
	white	14.972[a]	1.044	13.226	16.718

a. Covariates appearing in the model are evaluated at the following values: SAT = 1191.40, HSGPA = 3.46, Parental Education Level = .65.

Table 15 Quality of Effort: Marginal Means Estimated by Residence and Gender

Dependent Variable	Residence	gender	Mean	Std. Error	90% Confidence Interval	
					Lower Bound	Upper Bound
QEFfac	LLC	Male	17.211[a]	3.972	10.570	23.853
		female	22.402[a]	2.207	18.713	26.092
	residence hall	Male	22.672[a]	2.722	18.121	27.223
		female	23.239[a]	1.410	20.882	25.595
	off-campus	Male	22.137[a]	2.108	18.612	25.662
		female	21.524[a]	2.037	18.118	24.929
QEFpers	LLC	Male	14.800[a]	3.292	9.296	20.304
		female	21.455[a]	1.829	18.398	24.513
	residence hall	Male	21.320[a]	2.256	17.548	25.091
		female	23.213[a]	1.168	21.260	25.166
	off-campus	Male	18.008[a]	1.747	15.086	20.929
		female	17.975[a]	1.688	15.153	20.797
QEFstacq	LLC	Male	21.479[a]	4.563	13.849	29.108
		female	32.234[a]	2.535	27.995	36.472
	residence hall	Male	31.546[a]	3.127	26.318	36.774
		female	30.590[a]	1.619	27.883	33.297
	off-campus	Male	27.289[a]	2.422	23.239	31.338
		female	27.061[a]	2.340	23.149	30.973
QEFcontps	LLC	Male	18.151[a]	3.246	12.723	23.579
		female	26.965[a]	1.803	23.950	29.980
	residence hall	Male	25.100[a]	2.224	21.381	28.820
		female	28.518[a]	1.152	26.592	30.444
	off-campus	Male	25.966[a]	1.723	23.085	28.847
		female	24.610[a]	1.664	21.827	27.393
QEFconinf	LLC	Male	14.412[a]	2.452	10.312	18.513
		female	17.634[a]	1.362	15.356	19.912
	residence hall	Male	14.528[a]	1.680	11.718	17.338
		female	18.371[a]	.870	16.916	19.826
	off-campus	Male	15.145[a]	1.302	12.969	17.321
		female	13.822[a]	1.257	11.720	15.925

a. Covariates appearing in the model are evaluated at the following values: SAT = 1191.40, HSGPA = 3.46, Parental Education Level = .65.

Table 16 Quality of Effort: Marginal Means Estimated by Residence and Race

Dependent Variable	Livunit	dumrace	Mean	Std. Error	90% Confidence Interval	
					Lower Bound	Upper Bound
QEFfac	LLC	non-white	19.904[a]	2.689	15.408	24.399
		white	19.710[a]	3.700	13.523	25.897
	residence hall	non-white	22.902[a]	2.553	18.633	27.171
		white	23.009[a]	1.734	20.110	25.908
	off-campus	non-white	21.611[a]	1.589	18.955	24.268
		white	22.050[a]	2.560	17.769	26.330
QEFpers	LLC	non-white	20.138[a]	2.228	16.413	23.864
		white	16.117[a]	3.067	10.989	21.244
	residence hall	non-white	21.681[a]	2.116	18.143	25.219
		white	22.852[a]	1.437	20.449	25.255
	off-campus	non-white	20.272[a]	1.316	18.070	22.473
		white	15.711[a]	2.122	12.164	19.258
QEFstacq	LLC	non-white	30.518[a]	3.089	25.353	35.682
		white	23.195[a]	4.251	16.087	30.302
	residence hall	non-white	32.475[a]	2.933	27.571	37.379
		white	29.661[a]	1.992	26.331	32.992
	off-campus	non-white	28.327[a]	1.825	25.276	31.378
		white	26.022[a]	2.941	21.105	30.940
QEFcontps	LLC	non-white	25.913[a]	2.197	22.239	29.587
		white	19.203[a]	3.024	14.147	24.260
	residence hall	non-white	26.037[a]	2.087	22.548	29.526
		white	27.582[a]	1.417	25.212	29.951
	off-campus	non-white	26.498[a]	1.298	24.328	28.669
		white	24.077[a]	2.092	20.579	27.575
QEFconinf	LLC	non-white	15.963[a]	1.660	13.193	18.744
		white	16.078[a]	2.284	12.258	19.898
	residence hall	non-white	15.873[a]	1.576	13.238	18.509
		white	17.025[a]	1.070	15.235	18.815
	off-campus	non-white	17.156[a]	.981	15.516	18.796
		white	11.811[a]	1.580	9.169	14.454

a. Covariates appearing in the model are evaluated at the following values: SAT = 1191.40, HSGPA = 3.46, Parental Education Level = .65.

Table 17 Quality of Effort: Marginal Means Estimated by Gender, Race and Residence

Dependent Variable	Livunit	gender	race	Mean	Std. Error	90% Confidence Interval	
						Lower Bound	Upper Bound
QEFfac	LLC	Male	non-white	18.928 [a]	4.550	11.321	26.535
			white	15.495 [a]	6.580	4.493	26.496
		female	non-white	20.879 [a]	2.941	15.961	25.797
			white	23.925 [a]	3.251	18.490	29.361
	residence hall	Male	non-white	24.686 [a]	4.576	17.035	32.337
			white	20.658 [a]	2.958	15.712	25.603
		female	non-white	21.117 [a]	2.305	17.264	24.971
			white	25.360 [a]	1.686	22.541	28.179
	off-campus	Male	non-white	19.917 [a]	2.631	15.518	24.316
			white	24.357 [a]	3.351	18.754	29.960
		female	non-white	23.306 [a]	1.757	20.369	26.243
			white	19.742 [a]	3.763	13.451	26.033
QEFpers	LLC	Male	non-white	20.230 [a]	3.770	13.926	26.533
			white	9.370 [a]	5.452	.253	18.486
		female	non-white	20.047 [a]	2.437	15.972	24.122
			white	22.863 [a]	2.694	18.360	27.367
	residence hall	Male	non-white	20.623 [a]	3.792	14.283	26.963
			white	22.016 [a]	2.451	17.918	26.114
		female	non-white	22.739 [a]	1.910	19.545	25.932
			white	23.688 [a]	1.397	21.352	26.024
	off-campus	Male	non-white	18.846 [a]	2.180	15.201	22.492
			white	17.169 [a]	2.777	12.526	21.812
		female	non-white	21.697 [a]	1.456	19.263	24.131
			white	14.253 [a]	3.118	9.040	19.467
QEFstacq	LLC	Male	non-white	28.969 [a]	5.226	20.230	37.707
			white	13.989 [a]	7.558	1.351	26.626
		female	non-white	32.067 [a]	3.379	26.418	37.716
			white	32.401 [a]	3.734	26.157	38.644
	residence hall	Male	non-white	34.482 [a]	5.256	25.694	43.271
			white	28.610 [a]	3.398	22.929	34.291
		female	non-white	30.468 [a]	2.648	26.041	34.894
			white	30.712 [a]	1.937	27.474	33.951
	off-campus	Male	non-white	28.132 [a]	3.022	23.079	33.185
			white	26.445 [a]	3.849	20.009	32.881
		female	non-white	28.522 [a]	2.018	25.147	31.896
			white	25.600 [a]	4.322	18.373	32.827
QEFcontps	LLC	Male	non-white	25.660 [a]	3.718	19.444	31.877
			white	10.642 [a]	5.377	1.651	19.633
		female	non-white	26.166 [a]	2.404	22.147	30.185
			white	27.764 [a]	2.657	23.322	32.206
	residence hall	Male	non-white	25.264 [a]	3.740	19.012	31.517
			white	24.937 [a]	2.417	20.895	28.978
		female	non-white	26.809 [a]	1.884	23.660	29.959
			white	30.227 [a]	1.378	27.923	32.531
	off-campus	Male	non-white	26.408 [a]	2.150	22.813	30.003
			white	25.524 [a]	2.738	20.945	30.102
		female	non-white	26.589 [a]	1.436	24.189	28.990
			white	22.630 [a]	3.075	17.489	27.772
QEFconinf	LLC	Male	non-white	16.540 [a]	2.809	11.844	21.236
			white	12.285 [a]	4.062	5.493	19.077
		female	non-white	15.396 [a]	1.816	12.361	18.432
			white	19.871 [a]	2.007	16.516	23.227
	residence hall	Male	non-white	14.256 [a]	2.825	9.533	18.979
			white	14.800 [a]	1.826	11.747	17.853
		female	non-white	17.491 [a]	1.423	15.112	19.870
			white	19.251 [a]	1.041	17.511	20.991
	off-campus	Male	non-white	16.240 [a]	1.624	13.524	18.955
			white	14.051 [a]	2.069	10.592	17.509
		female	non-white	18.072 [a]	1.085	16.259	19.885
			white	9.572 [a]	2.323	5.689	13.456

a. Covariates appearing in the model are evaluated at the following values: SAT = 1191.40, HSGPA = 3.46, Parental Education Level = .65.

Figure 2 Estimated Marginal Means of Topics of Conversation by Residence and Gender Interaction

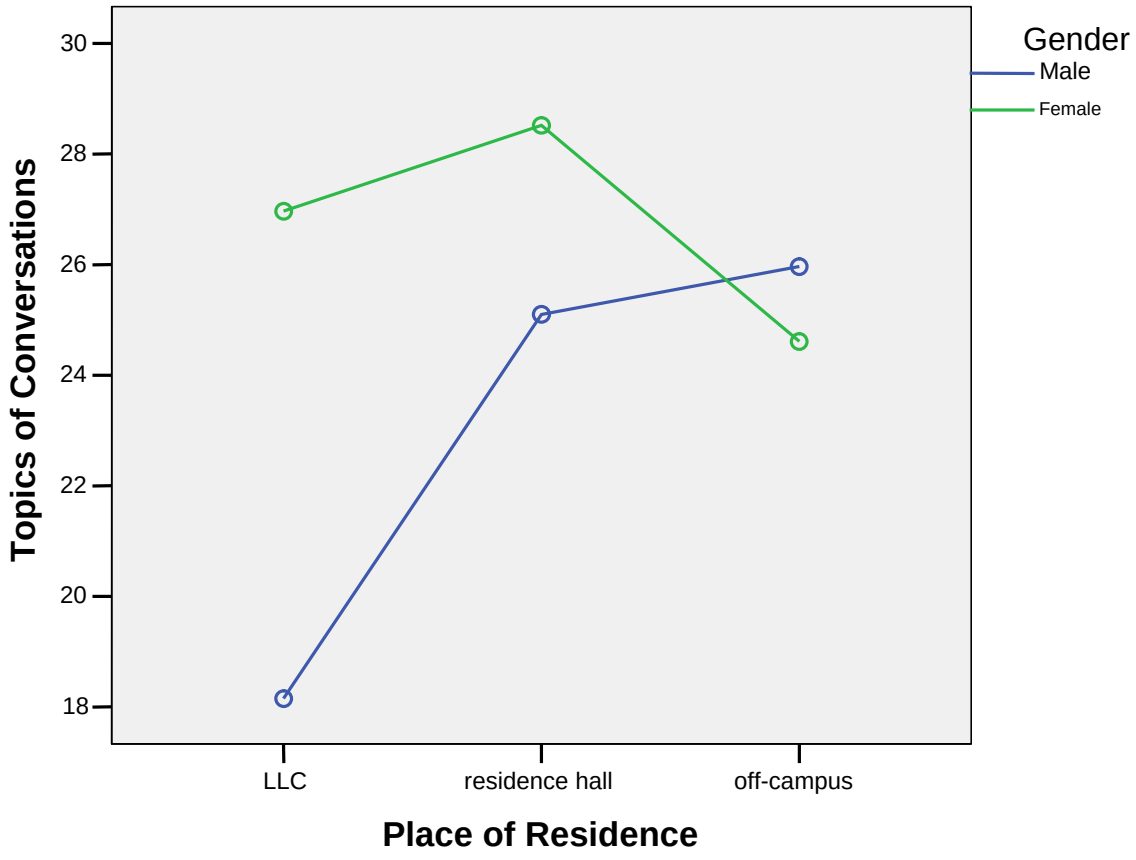
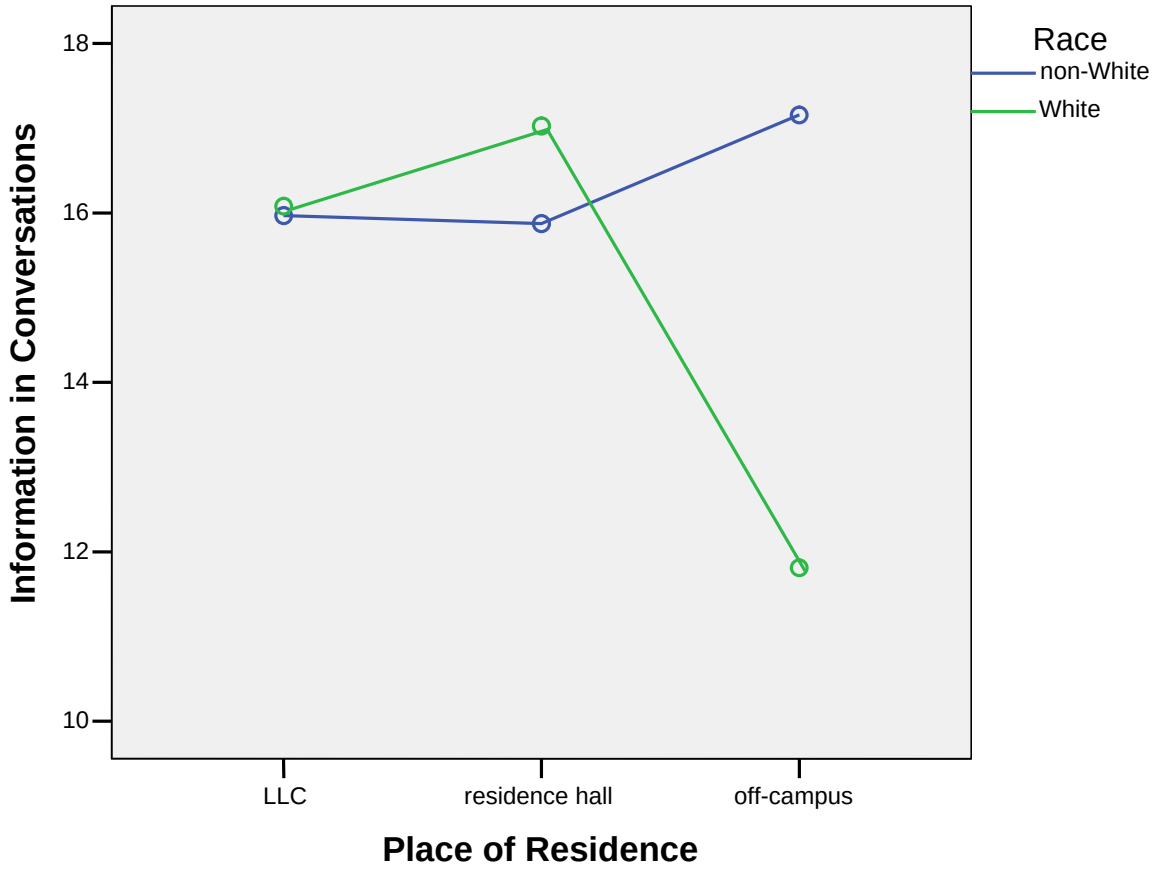


Figure 3 Estimated Marginal Means of Information in Conversations by Residence and Race Interaction



Model 2c examined student involvement in clubs and organizations and use of campus facilities by place of residence, gender and race. The main effects of place of residence (Wilks' lambda = F(6,110) = 1.22, p = .299), gender (Wilks' lambda = F(3,55) =1.26, p =.295), and race (Wilks' lambda = F(3, 55) = 0.95, p = .422) were not significant. Covariate variables and interaction effects for the model were also non-significant. The lack of significant main effects or interaction effects suggests that there is no mean difference between involvement in clubs and organizations, or use of campus facilities by students based on place of residence, gender or race. The null hypothesis was retained and the follow-up univariate analysis was not conducted.

MODEL 3

Model 3 examined whether students in the three residential groups evaluated their achievements on self-reported academic and social gain scales differently after one year. Mean differences by gender and race (main effects) and interactions of gender and race by place of residence and the three way interaction between gender, race and residence were also examined. Results for model 3 for the main effects of place of residence (Wilks'lamba F =0.83), gender (Wilks' lamba = F 1.83), and race (Wilks' lamba = F 0.73), indicate that the main effects were not significant. Interaction effects and covariate variables for the model were also non-significant. This suggests that there is no mean difference in self-reported gains among students based on residence, gender or race.

MODELS 4A-F

Tables 18 through 22 provide results for the fourth research question, examining the relationship of good educational practices on self-reported gains while controlling for student background characteristics and perceptions of environment. Five Blocked Hierarchical Regression models were conducted on the self-reported gain scales. The dependent variables for the five models included: gains in personal development; gains

in science and technology knowledge; gains in general education; gains in vocational preparation; and, gains in intellectual skills. The independent variables for all five models included student background characteristics, perception of college environment variables and the three good educational practices indices.

Table 18 (p. 103) displays the results for Model 4a, gains in personal development. Block one indicates that with the exception of high school GPA, student background characteristics were not significant predictors of gains in personal development. High school GPA was a significant predictor at the $p<.10$ level. However, the F-ratio indicated that student background variables as a whole are not significant predictors of gains in personal development. Holding student background variables constant, block 2 indicated that student perception of the college environment increased the total variance explained to 42.1 %. Change in R-squared was also significant at $p<.001$. Student perception of the practical environment (ENprac) that exists on campus was a significant predictor at $p<.001$.

In block three, when good educational practices are entered into the model, the total variance explained in the adjusted R-square increased to 50.2 %. The change in R-squared was significant ($p<.01$). Of the three Good Educational Practice indices, only cooperation among students (CaSI) entered the model as a significant predictor ($p<.01$), accounting for 8.1 % of the total variance. The fourth block of the model indicates that students who live in the living-learning community versus living in a traditional residence hall or off campus reported slightly higher gains in personal development ($p<.10$). Although a significant partial regression coefficient for place of residence was reported, the variable did not significantly add to the models ability to predict gains in personal development. Thus, place of residence is not considered a significant variable in this model. As noted earlier, place of residence, considered an environmental variable, entered the model in a separate block in order to determine place of residence's

relationship with the academic and social outcomes. For model 4a, the outcome of the final model, i.e., including place of residence as a significant predictor variable, might have been different if place of residence had been included along with the other environmental variables in block 2.

The final model represented in block 3 indicates that 44.7 % of the total variance was explained by the independent variables after adjusting for the sample size in the study. Perception of practical environment ($p<.001$) and cooperation among students ($p<.001$) were significant variables in the model. Students' perception of the college environment accounted for the largest association with gains in personal development.

Table 18 Gains in Personal Development (GNpersdev)

Model 4a				
	Block 1	**Block 2**	**Block 3**	**Block 4**
Female (Male)	.170	.077	.030	.024
White (non-White)	.015	.059	.029	.089
SAT	-.135	-.008	-.064	-.091
High School GPA	.217 *	.174 *	.146	.146
Parent Education Level	-.060	-.008	-.021	-.044
ENprac		.603 ****	.461 ****	.464 ****
CaSI			.324 ***	.355 ****
Learning Community				.180 *
Off campus				.109
Constant	14.95	-0.73	-0.02	-0.23
R-square	.104	.421	.502	.527
R-square Change		.317 ****	.081 ***	.025
F-ratio	1.53	7.87 ****	9.19 ****	7.66 ****
Adjusted R-Square	.036	.368	.447	.458

Note. Standardized beta coefficients reported
* = p <.10 ** = p <.05 *** = p <.01 **** = p <.001

Table 19 (p. 105) displays the results for Model 4b, gains in science and technology knowledge. The F-ratio for block one indicates that student background variables as a whole are significant predictors of gains in science and technology knowledge at the $p<.05$ significance level. The R-square indicates that student background variables explained 15.6 % of the variance in gains in science and technology

knowledge. The R-squared was also significant at the p<.01 significance level. High school GPA (p<.05) was the only significant student background predictors of gains in science and technology. Holding student background variables constant, block two indicated that student perception of the college environment accounts for an additional 8.7 % of the variance in gains in science and technology knowledge, increasing the total variance explained to 24.4 %. Student perception of the practical environment on campus was a significant predictor at the p<.01 significance level. In block three, the change in R-square was significant at p=.05. The student-faculty interaction index was the only good educational practice that was significant (p<.01), accounting for 6 % of the total variance in gains in science and technology knowledge. In block three, gender also entered as a significant predictor at the P<.10 significance level with male students reporting slightly higher gains than female students. The fourth block of the model reported that the change in R-square was non-significant, indicating that place of residence was not a significant predictor of gains in science and technology knowledge.

The final model represented in block three indicated that 22.8 % of the total variance was explained by the independent variables after adjusting for the sample size in the study. High school GPA, students' perception of the practical environment and student-faculty interaction were significant variables in the model. Student background characteristics appeared to account for the largest influence on gains in science and technology knowledge.

Table 19 Gains in Science and Technology (GNscitech**)**

Model 4b	**Block 1**	**Block 2**	**Block 3**	**Block 4**
Female (Male)	-.124	-.173	-.197 *	-.181
White (non-White)	-.138	-.115	-.171	-.135
SAT	-.107	-.040	-.084	-.073
High School GPA	.255 **	.232 **	.188 *	.198 *
Parent Education Level	-.178	-.151	-.198	-.170
ENprac		.316 ***	.203 *	.241 *
Student/faculty Index			.286 **	.270 **
Learning Community				.005
Off campus				.109
Constant	7.16	0.73	2.54	0.88
R-square	.156	.244	.304	.312
R-square Change		.087 ***	.060 **	.008
F-ratio	2.44 **	3.48 ***	3.99 ****	3.12 ***
Adjusted R-Square	.092	.174	.228	.212

Note. Standardized beta coefficients reported
* = p <.10 ** = p <.05 *** = p <.01 **** = p <.001

Table 20 (p. 106) displays the results for Model 4c, gains in general education. Block one indicates that the F-ratio for student background characteristics as a whole was non-significant. After accounting for student background variables, block two indicated that student perception of the college environment accounted for 18.6 % of the variance in gains in general education, increasing the total variance explained to 29.8 %. The change in R-square was significant at the p<.001. As with models 1a and 1b, only student perception of the practical environment was a significant college environment predictor. The change in R-square for the third block of variables was significant at p<.001. The active learning index (p<.001) entered the model in block three as a significant good educational practice predictor. This variable accounted for 10.7 % of the total variance in gains in general education. The fourth block of the model reported that the change in R-square was non-significant for place of residence, indicating that place of residence was not a significant predictor of gains in general education after controlling for student background, perception of environment and good educational practices.

The final model represented in block three indicated that 34.0 % of the total variance was explained by the independent variables after adjusting for the sample size in the study. Parent level of education, student perception of the practical environment, and the active learning index were significant variables in the model. Student perception of the environment appeared to account for the largest influence on gains in general education.

Table 20 Gains in General Education

Model 4c				
	Block 1	**Block 2**	**Block 3**	**Block 4**
Female (Male)	.285 **	.214 *	.134	.149
White (non-White)	-.095	-.061	-.088	-.023
SAT	-.099	-.002	-.066	-.065
High School GPA	.083	.050	.025	.035
Parent Education Level	.232 *	.272 **	.286 ***	.307 ***
ENprac		.461 ****	.326 ***	.370 ***
Active Learning			.368 ****	.371 ****
Learning Community				.080
Off campus				.175
Constant	15.89	5.17	4.60	2.37
R-square	.113	.298	.405	.424
R-square Change		.186 ****	.107 ****	.020
F-ratio	1.67	4.60 ****	6.21 ****	5.08 ****
Adjusted R-Square	.045	.233	.340	.341

Note. Standardized beta coefficients reported
* = p <.10 ** = p <.05 *** = p <.01 **** = p <.001

Table 21 (p. 107) displays the regression results for Model 4d, gains in vocational preparation. Block three shows that student perception of the practical environment (ENprac) was the only significant predictor of gains in vocational preparation (p<.001). The standardized beta coefficient indicates that when all other independent variables are held constant, an increase of one standard deviation in ENprac will result in almost two-thirds of a standard deviation increase in gains in vocational preparation. Student background characteristics, good educational practice indices and place of residence were

not significant predictors. Student perception of the practical environment accounted for 28.8 % of the total variance (31.2%) in gains in vocational preparation.

Table 21 Gains in Vocational Preparation

Model 4d			
	Block 1	**Block 2**	**Block 3**
Female (Male)	.112	.023	.059
White (non-White)	.004	.046	.064
SAT	.017	.138	.180
High School GPA	.055	.014	.029
Parent Level Education	-.146	-.096	-.013
ENprac		.575 ****	.637 ****
Learning Community			-.166
Off campus			.156
Constant	7.00	-1.03	-3.47
R-square	.043	.331	.389
R-square Change		.288 ****	.058 *
F-ratio	0.59	5.36 ****	5.02 ****
Adjusted R-Square	-.029	.269	.312

Note. Standardized beta coefficients reported
* = p <.10 ** = p <.05 *** = p <.01 **** = p <.001

Table 22 (p. 108) displays the results for Model 4e, gains in intellectual skills. Block one indicated student background characteristics were not a significant predictor of gains in intellectual skills. In block two, the change in R-square was significant at p<.001. Student perception of the practical environment (p<.05) and perception of the scholarly environment (p<.05) were both reported as significant predictors of gains in intellectual skills. The perception of the college environment factors accounted for 38.1% of the variance in gains in intellectual skills, increasing the total variance explained to 44.7 %. In block 3, the change in R-square was significant at p<.01. The active learning index (p<.001) entered the model as a significant good educational practice. This variable accounted for 7 % of the total variance in gains in intellectual skills. The fourth block of the model indicated that place of residence was not a significant predictor of gains in intellectual skills.

The final model represented in block 3 indicated that 45.6 % of the total variance in gains in intellectual skills was explained by the independent variables after adjusting

for the sample size in the study. Student perception of the practical environment, student perception of the scholarly environment and the active learning index were significant variables in the final model. Student perception of the environment appeared to account for the largest influence on gains in intellectual skills.

Table 22 Gains in Intellectual Skills

Model 4e	**Block 1**	**Block 2**	**Block 3**	**Block 4**
Female (Male)	.171	.070	.005	.023
White (non-White)	-.061	-.033	-.056	-.008
SAT	-.065	.089	.039	.048
High School GPA	.055	-.026	-.049	-.039
Parent Education Level	-.076	.005	.018	.046
ENprac		.383 **	.252 *	.296 *
ENscholar		.325 **	.352 **	.352 **
Active Leaning			.299 ***	.292 ***
Learning Community				.027
Off campus				.145
Constant	18.55	1.53	0.87	-1.34
R-square	.066	.447	.517	.531
R-square Change	.066	.381 ****	.070 ***	.014
F-ratio	0.93	7.45 ****	8.43 ****	6.90 ****
Adjusted R-Square	-.005	.387	.456	.454

Note. Standardized beta coefficients reported
* = p <.10 ** = p <.05 *** = p <.01 **** = p <.001

MODEL 5

Table 23 (p. 109) reports results for the fifth research question, examining if membership in a living-learning community predicts college GPA. Blocked Hierarchical Regression Analysis was conducted on four years of institutional data. The dependent variable for the model was current college grade point average. The independent variables included student background variables and place of residence.

Block one indicated that the F-ratio was significant at p<.001. Student background variables accounted for 16.2 % of the variance in college GPA. SAT, high school GPA, being female and number of years enrolled were significant predictors of college GPA. Block two indicated that membership in a living-learning community

was not a significant predictor of college GPA. The final model, depicted in block one, indicated that student background variables and number of years enrolled appeared to account for 15.8 percent of the variance in college GPA after adjusting for the sample size. In this model, SAT score was the strongest predictor of GPA. An increase of one standard deviation in SAT results in almost one-third of a standard deviation increase in GPA.

Table 23 Predictors of GPA

Model 5		
	Block 1	**Block 2**
SAT	.305 ****	.302 ****
High School GPA	.182 ****	.182 ****
Female (Male)	.084 ***	.083 ***
White (non-White)	.045	.044
Number Years Enrolled	.063 **	.063 **
Learning Community (non-LLC)		.023
Constant	-.729	-.710
R-square	.162	.163
R-square Change		.001
F-ratio	41.32 ****	34.53 ****
Adjusted R-Square	.158	.158

Note. Standardized beta coefficients reported
* = p <.10 ** = p <.05 *** = p <.01 **** = p <.001

MODEL 6

Table 24 (p. 110) reports results for the sixth research question, examining if membership in a living-learning community predicts retention. Block one indicated that SAT, current GPA, and race were significant predictors of retention. Block two, representing the final model, indicated that participation in a living-learning community had a significant association with retention. The change in pseudo R-square was significant at p<.10. The odds of persisting for students who participate in the learning community are 1.65 times (65% greater than) students who do not participate in the learning community after controlling for student background characteristics. Current

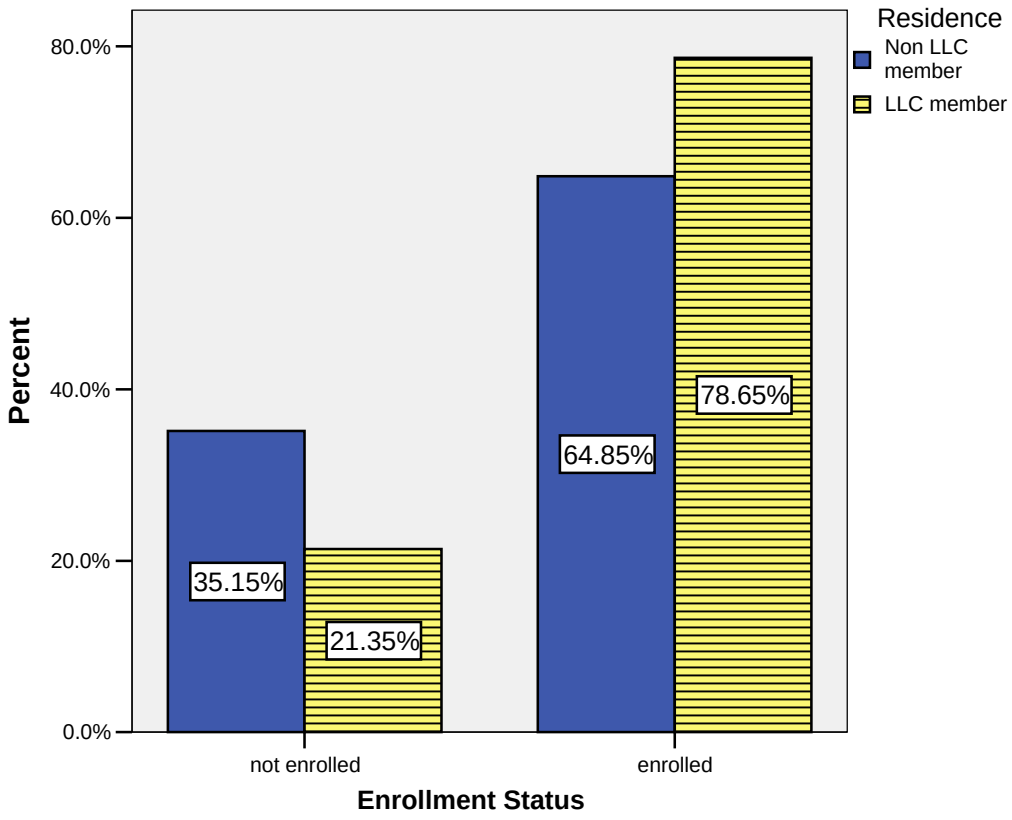
GPA had a significant, positive relationship with the odds of persisting while being White had a significant, negative relationship with the odds of persisting. The pseudo R-square indicated that the predictor variables explained about 18.1 percent of the variation in predicting future enrollment. Figure 4 (p. 111) shows percent of students enrolled and percent of students not enrolled by place of residence.

Table 24 Predictors of Enrollment Status

Model 6				
	Block 1		**Block 2**	
	B	Exp(*B*)	*B*	Exp(*B*)
SAT	.001 *	1.00	.001	1.00
High School GPA	.170	1.18	.182	1.19
Current GPA	.977 ****	2.65	. 974 ****	2.65
Female (Male)	.040	1.04	.049	1.05
White (non-White)	- .431 ***	0.65	-.443 ***	0.64
Living-Learning Community (non-LLC)			.502 *	1.65
Pseudo R-square	.177		.181	
Pseudo R-square Change			.004 *	
Chi-Square	147.49 ****		150.89 ****	

Note. Standardized beta coefficients and exponent of the coefficients reported
* = p <.10 ** = p <.05 *** = p <.01 **** = p <.001

Figure 4 Enrollment Status by Place of Residence



SUMMARY

Table 25 (p. 113) summarizes the analyses of the six research questions examined in this chapter. MANCOVA analyses examined whether place of residence, gender, race and interactions between the variables were related to student perception of the environment, level of effort on a variety of college activities, and estimates of academic and social gains. Results indicated that participation in a living-learning community had a minimal relationship with level of effort and self-reported academic and social gains. However, living in a residence hall was associated with higher levels of effort on a

number of quality of effort scales. Effect sizes for the findings were small to medium indicating that the magnitude or importance of the place of residence effect was relatively moderate.

Regression analyses examined predictors of self-reported academic and social gains. With the exception of high school GPA and parent education level, student background variables were not found to be significant predictors of self-reported academic and social gains. Student perceptions of the scholarly and practical environments were also significant predictors, with perception of the practical environment significant in all five models. At least one of the three good practice indices was a significant predictor in every model except the gains in vocational preparation model. Place of residence was not a significant in any of the models.

Regression and logistic regression was also conducted on four-years of institutional data analyzing grade point average and retention. In both models, various student background variables helped explain GPA and retention, and participation in the learning community was found to be a significant predictor of college retention.

Table 25 Summary of Results

Model 1	**Do students in the three residential groups have differing perceptions about the college environment after one academic year?**
Scholarly Environment (ENscholar)	A significant mean difference was found between students who lived in a residence hall and students who lived off campus.
Personal Relations Environment (ENpersrel)	A significant effect for the three way interaction between residence, gender and race was detected for ENpersrel.
Practical Environment (ENprac)	A significant mean difference for ENprac was found between students who resided in the living-learning community and students who lived off campus. A significant mean difference was also found between students who lived in a residence hall and students who lived off campus. A significant effect for the three way interaction between residence, gender and race was detected for ENprac.
Opinion of College	No significant difference
Model 2	**Do students in the three residential groups exhibit differing levels of engagement with campus resources and activities as measured on a variety of college activity and experience scales after one year?**
Library Experiences (Qelib)	No significant differences
Computer and IT Experiences (QEcomput)	No significant differences
Course Learning (QEcourse)	No significant differences
Writing Experiences (QEwrite)	No significant differences
Science and Quantitative Eperiences (QEsci)	No significant differences
Experiences with Faculty (QEfac)	No significant differences

Personal Experiences (QEpers)	Students who resided in the residence hall exhibited a significant mean difference in perceptions of personal experiences from students who lived off campus.
Student Acquaintances (Qestacq)	No significant differences
Topics of Conversation (QEcontps)	A significant gender effect for the topics of conversation scale (QEcontps) was found. Female students exhibited higher levels of effort with regard to topics of conversations than did males. A significant place of residence and gender interaction for the topics of conversation scale (QEcontps) was reported. On campus female students exhibited higher levels of effort than on campus males, whereas off campus males exhibited higher levels of effort than did off campus female students. A significant effect for the three way interaction between residence, gender and race was also detected for QEcontps.
Information in Conversations (QEconinf)	A significant race and place of residence effect was found for the information in conversations scale (QEconinf). White students who lived on campus exhibited greater levels of effort than did non-White students who lived on campus, whereas off campus White students exhibited lower levels of effort than non-White students who lived off campus. A significant effect for the three way interaction between residence, gender and race was also detected for QEconinf.
Art, Music and Theater (QEamt)	No significant differences
Clubs and Organizations (QEclubs)	No significant differences
Campus Facilities (QEfacil)	No significant differences
Model 3	**Do students in the three residential groups evaluate their achievements on self-reported academic and social gain scales differently after one year?**
Gains in Personal Development (GNpersdev)	No significant differences
Gains in Science and Technology (GNscitech)	No significant differences

Gains in General Education (GNgened)	No significant differences
Gains in Vocational Preparation (GNvocprep)	No significant differences
Gains in intellectual Skills (GNintelsk)	No significant differences

Model 4	**What types of educational practices are associated with students' self-reported academic and social gains?**
Gains in Personal Development (GNpersdev)	Student perception of the practical environment and the cooperation among students index were reported as significant variables in the model.
Gains in Science and Technology (GNscitech)	High school GPA, student perception of the practical environment and the student-faculty interaction index were significant variables in the model. Student background characteristics accounted for the largest influence on gains in science and technology. Place of residence was not a significant predictor.
Gains in General Education (GNgened)	Parent level of education, student perception of the practical environment, and the active learning index were significant variables in the model. Student perception of the environment accounted for the largest influence on gains in general education. Place of residence was not a significant predictor of GNgened gains.
Gains in Vocational Preparation (GNvocprep)	Student perception of the practical environment (ENprac) was the only significant predictor of gains in vocational preparation. Good practice indices and place of residence were not significant.
Gains in intellectual Skills (GNintelsk)	Student perception of the practical environment, student perception of the scholarly environment and the active learning index were significant variables in the final model. Student perception of the environment accounted for the largest influence on gains in intellectual skills. Place of residence was not a significant predictor.

Model 5	**Do students who participate in the living-learning community exhibit higher grade point averages?**
Predicting College GPA	High school GPA, SAT score, being female and the number of years enrolled were significant predictors of college GPA. The SAT score was found to be the strongest predictor of GPA. Participation in the learning community was not significant.

Model 6	**Are students who participate in the living-learning community retained at higher rates than non-participants?**
Predicting Retention	Participation in a living-learning community and current GPA had a significant, positive relationship on the odds of persisting. Being a White student had a significant, negative relationship on the odds of persisting.

LIMITATIONS

Research is replete with cautions about the ability to generalize results from studies that involve self-selection to the larger population. While attempts were made to account for the influence of student characteristics, deVaus (2001) cautions that the researcher can only control for variables that are included in the study. The sample size of 72 participants presented challenges in addressing other potential control variables. Household income, the number of hours that a student studies per week, whether the student works or not and the students' chosen major were examples of potential control variables which were excluded from this study in an attempt to limit the number of predictor variables relative to sample size.

The proposed method of analysis (matched subjects) and timeframe to conduct the study were also altered significantly due to changes requested by host institution IRB. A matched subjects design would have reduced the within-groups variance and provided for less variance than a random selection process (Gravetter and Wallnau, 1999), and provided greater statistical power relative to sample size (Campbell and Stanley, 1966; Minke, 1997). The timeframe to collect the data excluded the ability to examine survey data and then craft interview questions to more deeply probe results of the quantitative CSEQ survey. The opportunity to more deeply probe with specific questions might have provided more meaningful and insightful information given the limited significant

findings of this study. As a result, generic questions created by Shushock (2002) for a study with similar research questions were used.

Selection bias may also be a factor in this study. As noted in chapter three, significant differences in SAT score and participation rates by place of residence were found between students who participated in the study and the freshman class group. The mean SAT score for students who participated in the study was 1191 compared to a mean score of 1152 for students who did not participate. Additionally, participation rates by students residing in the living-learning community and residence hall in this study were higher than their overall representation in the freshman class population. This suggests that student characteristics such as motivation or academic preparation, or a student's place of residence may have played a role in a student's decision to participate in the study.

Additionally, the findings from this study suggest only indirect relationships, not direct causation. The external validity of this study is also subject to the small sample size and the indirect relationships. External validity limits the ability to generalize the findings of the study beyond the institution being studied.

CHAPTER V

Discussion

This study began with a discussion on the calls for reform in higher education and the need to create purposeful and connected learning environments. Living-learning centers were discussed as a means to enhance the undergraduate experience by more fully engaging students in the educational process. Relevant literature to support this contention was presented in Chapter II. This study specifically evaluated the relationship between three types of living arrangements and student experiences within the educational process. Chapter III discussed methods of analysis and Chapter IV presented the results of these analyses. This chapter will discuss the relevance of the results, tying the results to literature where applicable and also discussing implications of the findings. Student comments from individual interviews, presented in *italics* for easy reference, will be used to better amplify the findings from the student perspective. Below is a list of students identified by pseudonym and place of residence.

Pseudonym	Place of Residence
Alberto	Off campus
Felipe	Off campus
Gloria	Living-Learning Community
Jake	Residence Hall
Pete	Residence Hall
Sarah	Living-Learning Community
Suzy	Living Learning Community

COLLEGE ENVIRONMENT

The first analysis examined whether students in the three residential settings (living-learning community, residence hall, and off campus) had differing perceptions about the college environment. The role that the college environment plays in helping

students achieve various educational outcomes is stressed in the literature (Moos, 1979; Astin, 1993, 1984; Pascarella and Terenzini, 1991). Brown (2004) indicates that the institutional environment provides the setting and context where student experiences, interactions with people and orientation to learning converge to produce learning.

This study found that students in the living-learning community and students in the residence hall demonstrated higher perceptions on two of the three college environment scales than did off campus students.[13] The findings in this study are consistent with the literature. Specifically, the living-learning community and residence hall settings had a significant, positive relationship on students' perception of the practical environment (ENprac). Perceptions of the practical environment included an emphasis on vocational and occupational competence, on personal relevance and practical value of courses, on information literary skills and on developing an understanding and appreciation of diversity. Additionally, this study found that living in a residence hall had a significant association on student perception of the scholarly environment (ENscholar). Perception of the scholarly environment included an emphasis on academic, scholarly, and intellectual qualities, on critical, evaluative, and analytical qualities, and on aesthetic, expressive, and creative qualities.

Student perception of the college environment is important in that students are more likely to exhibit behaviors and gains in areas that they perceived as valued by the institution (Kuh, Pace, and Vesper , 1997). Referred to as environmental press (Murray,

[13] Throughout the discussion, references to the living-learning community (LLC) include only the group of students who resided in the living-learning community. References to residence hall include only the group of students who resided in campus residence halls. References to on campus included both the living-learning and residence hall groups since both are campus based housing. References to off-campus included only the off-campus group.

1938; Pace & Stern 1958; Stern, 1970; and, Moos, 1979), Kuh et al. (1997) report that residential arrangements foster interactions making it easier to communicate academic expectations and establish an environmental press consistent with institutional expectations. Examples of environmental press are provided in the following comments.

Gloria [LLC]:

> *Some of the people in the community are really, really hard core when it comes to studying. No, you should be in your room studying instead of playing board games or Texas Hold'em.*

Sarah [LLC]:

> *This campus has gone beyond my expectations. I think it is because what the campus is all about. People have ideas about what it's like and they are promoted throughout the campus.*

Suzy [LLC]:

> *People apply for [the LLC] because they want to learn. There is a class and service learning plus you feel that you have to act as a role model because people look up to you.*

The main effect for place of residence indicated that no mean difference in perceptions of the personal environment (ENpers) was found, suggesting that place of residence had no effect on a student's ability to develop relationships with faculty, administrative staff and other students. Although students in the LLC and residence hall indicated higher levels of satisfaction with their college experience than off campus

students, no significant mean differences were detected between the three living arrangements. Both findings are inconsistent with literature that shows that on campus students have more faculty and peer contact (Astin, 1977) and are generally more satisfied with their college experience (Astin, 1973, 1977; Chickering, 1974; Upcraft and Pilato 1982). A significant three-way interaction between gender, race and residence was found for perceptions of the personal environment (ENpers). The interaction effect, however, suggested that gender, race and place of residence made no consistent contributions towards a student's ability to develop relationships with faculty, administrative staff and other students.

One explanation for the lack of a significant on campus effect in this study for perceptions of the personal environment (ENpers) may be that a great number of on campus residents lived within driving distance of their homes. Research by Astin (1993) indicates that most of the effects of living on campus are attributable to the student either (a) not living at home and/or (b) attending college some distance from home. Astin states that leaving home to attend college has a direct effect on satisfaction and a direct effect on a number of self-reported growth areas.

Alberto [Off Campus]:

> *The campus during the week is very busy but Friday afternoon it is dead, no one is here.*

Alberto's comment implies that the social atmosphere of the college may change on weekends when students go home, lessoning the opportunity for students to interact with peers. Additionally, students who frequently go home may not fully immerse themselves into the college environment or they may find it easier to go home for support

and advice when faced with a challenge or conflict instead of working through the issue on their own. Thus, the opportunity for many students to easily go home may have mitigated the effects of living on campus.

The lack of a significant finding may be due to insufficient statistical power to detect an effect, or it may suggest that there were other factors besides residential setting that influenced student perception of the personal environment and satisfaction with the institution, such as institutional size or institutional mission. Thus, regardless of place of residence, students experienced personal interactions that led to a positive perception of the institution. This is important, taking into account that almost 60% of freshman students and a much greater percentage of upper-class students at the study institution resided off campus.

QUALITY OF EFFORT

This study examined students' level of effort by place of residence on thirteen quality of effort scales. The thirteen scales were organized into three groups: academic and intellectual experiences; personal and interpersonal experiences; and, use of group facilities and involvement in clubs and organizations. The literature supports that on campus residents are more fully involved in academic, extracurricular and social activities than students who live off campus (Chickering, 1974; Upcraft and Pilato, 1982; Astin, 1984, 1985, 1996; Pascarella and Terenzini, 1991, Tinto, 1997) Pace (1980), for example, found that "On all of the quality-of-effort scales it is clearly better to live in campus housing than to live at home with parents" (p.14). Additionally, a small body of evidence suggests that residing in a living-learning community is more beneficial than living in a conventional residence hall (Pascarella and Terenzini, 1991).

Academic and Intellectual Experiences

No significant mean differences in academic and intellectual experiences were reported among students in the three living areas. Academic and intellectual experiences included writing, library experiences, computer and technology experiences, classroom experiences and science and quantitative experiences. The lack of significant differences may signify that the university was providing educational experiences that promote equal levels of effort with regard to academic and intellectual experiences for all students, regardless of place of residence. This does not necessarily imply that all students were receiving the same experience, but that they were being exposed to different educational practices that promote equal levels of effort.

For example, the living-learning community provided a unique opportunity to combine course learning activities with out-of-class learning activities. While no significant difference in means was found between the living groups, comments by Sarah, Gloria and Suzy indicate that LLC participants were receiving a unique experience through the required LLC course.

Sarah [LLC]:

> *The "Good Life"[14] has affected me a lot because we do a lot of service learning. We actually live what we learned.*

Gloria [LLC]:

> *If I wasn't in [the LLC] I wouldn't be as involved in the service programs as I am now. I was involved in high school, but the service learning in [the LLC] is completely different and has taken on a new meaning.*

[14] The Examined Life and The Good Life were the philosophy courses taught to living-learning participants during the fall and spring semesters, respectively.

Suzy [LLC]:

> *[The LLC] is basically another philosophy class but it is more in depth, and you have this service learning part also, so it is a hands-on class.*

Comments by Sarah and Jake also support that good practices with regard to classroom instruction were in place at the institution.

Sarah [LLC]:

> *And it is kind of cool because they all connect. History, philosophy, theology, English, they all kind of connect and I have just been noticing that in college. I find that amazing too. The way that the faculty teach the course make it special.*

Jake [Residence Hall]:

> *I was surprised at how much I was learning. Like and how, it all works in with each other, everything works off each other. You learn something in history and then you learn it in theology and it relates to English.*

Student expectations, motivation and previous educational experiences also impact their perceived levels of effort. "A person's previous experiences affect not only the person's approach to a situation, but also what he or she expects to get out of it, and how predisposed an individual is to maximize the whole experience" (Brown, 2004). One example is how Gloria and Sarah viewed their experiences with writing papers at the university.

Gloria [LLC]:

> *The writing expectations are about the same as high school. I am a strong writer. I have had to adjust to different writing styles of the courses.*

Sarah [LLC]:

> *Papers! This school is a writing university. I totally took that for granted. I didn't think that I would have a lot of papers, but, I mean its been good because I have improved my writing. But it is kind of stressful. I had three papers last week. The average paper is 3-5 quality pages. I usually have multiple papers a week.*

Personal and Interpersonal Experiences

Personal and interpersonal experiences included experiences with faculty (QEfac), personal experiences (QEpers), student acquaintances (QEstacq), topics of conversation (QEcontps) and information in conversations (QEconinf). This study found that students who resided in the residence hall exhibited a significant difference in quality of effort with regards to personal experiences (QEpers) from students who live off campus. This is consistent with literature, suggesting that living on campus maximizes a student's opportunity for social interactions (Pascarella and Terenzini, 1991). Student comments suggest that on campus students are aware of the advantage they have over off campus students.

Pete [Residence Hall]:

> *There is always at least 20 people in the residence hall lounge talking, drinking coffee and studying. The library, the student lounge, the cafeteria and the residence hall lobby tend to be the major gathering spots because they are conducive to studying, playing games and such.*

Jake [Residence Hall]:

> *I think that [in the residence hall] you get to meet a variety of people and you can probably make more friends than you would have if you lived in an apartment or commuted.*

Significant main effects for gender, and the place of residence and gender interaction were also found for the topics of conversation scale (QEcontps). On campus female students exhibited higher levels of effort than on campus males, whereas off campus males exhibited higher levels of effort than did off campus female students. The scale looked at students' level of engagement in conversations related to current events, social and ethical issues, religion, arts, and the economy. It is unclear why off campus men exhibited higher levels of effort on the topics of conversations scale. Many of the off campus students resided in the metropolitan area with their families. One possible explanation for the difference is that male students may have engaged in conversations with family members and they represented a larger percentage of off campus students who participated in this study. This is an area that requires additional study.

A significant place of residence and race interaction for the information in conversations scale was also found. The information in conversation scale examined a students' level of effort on reading additional material related to a topic, on changing one's opinion as a result of a discussion with others or persuading others to change their opinions, and exploring different ways to think about a topic. White students who lived on campus also exhibited greater levels of effort than did non-White students who lived on campus. Whereas off campus White students exhibited lower levels of effort than non-White students who lived off campus. One possible explanation for this is that more of the off campus non-White students lived at home with their families where dialogue may have been encouraged and part of family tradition. A comment by Alberto supports the notion that family plays an important role for Mexican-American college students. This is another area that warrants further investigation.

Alberto [Off Campus]:

> *I have been checking the college idea for both Americans and Mexicans, and Mexican students usually stay at home. Few colleges actually offer dorms. That's another reason, it is like tradition to spend more time with your family.*

Personal and interpersonal experiences also included student interaction with faculty members. Literature reports a positive association between the nature and frequency of a student's out-of-class contacts with faculty and academic gains (Pascarella, 1980; Chickering and Reisser, 1993; Pascarella and Terenzini, 1991, and Terenzini, 1996). Interestingly, students in all three living areas in this study perceived faculty to be available and involved and thus no significant difference in level of student-faculty interaction was found by place of residence. In the individual interviews all seven students commented on their positive interactions with faculty members. Two students commented that faculty members had been influential in helping them make a decision. For example, Jake stated that his English teacher had been influential in his choice of major.

Jake [Residence Hall]:

> *His lectures are great. One, it makes college enjoyable when the lectures are enjoyable. Two, he helped me realize that I really like English. I have become an English major because of his lectures, and because I have become so enthralled with all the literature we are reading. Plus he is my academic advisor and he has helped me with all my classes. He is really knowledgeable.*

Suzy indicated how a discussion with the living-learning community faculty member influenced her decision to participate in the living-learning community.

Suzy [LLC]:

> *Originally I was going to live in the [residence hall], but then the director talked with me and said I should apply for the learning community and that I would enjoy it. And she was right, I really enjoy it. I have enjoyed every moment. I am really glad that I didn't come to live in the [residence hall]. I wouldn't have gotten the same experience.*

Other students commented on the availability and helpfulness of faculty members. One member of the living-learning community indicated that the program director was an amazing person.

Sarah [LLC]:

> *You can go to her with any problem. If she can't help you she knows people who can. That is really cool and she has helped a lot of us.*

Additionally, Gloria mentioned the positive effect of interacting with her faculty members.

Gloria [LLC]:

> *When you start interacting more you find out more about the course. It helps in the long run. Most of the time I interact before, after and during the class, not during faculty office hours.*

Jake made the following comment about his interaction with faculty.

Jake [Residence Hall]:

> *A lot of my faculty I actually talk with them when I am not in class. Like I will go and talk about certain things like projects or other things that are coming up in the class. I email them and they are usually always in their offices when they say*

they are and even when they don't have office hours. I also see some of my faculty at campus lectures.

Notably, while students discussed how faculty were available and expressed genuine interest in the lives of students, the faculty contacts revolved around classroom and academic activities, not extra-curricular activities. This is summed up in an observation made by Alberto that "*the faculty are rarely involved in student activities*." Jake added his own rationale for why the faculty were not involved in student activities.

Jake [Residence Hall]:

As for student events, this is not something that the professors will do. Most of them are not young enough and they do not want to do the things we do.

While various studies have noted differences in faculty interaction by gender (Baxter Magolda, 1987; Kuh, 1995) and race (Lunberg and Schreiner, 2004), this study found no significant difference. Additionally, the extent and degree to which students and faculty interact is determined not only by faculty level of engagement, but also by the students' level of initiative in forming relationships with faculty. The following statement speaks to the level of student effort and initiative in forming relationships with faculty members.

Pete [Residence Hall]:

For the most part I develop friendships with my professors but I don't give them insights into my study habits or anything. They basically only have my grades to go by, and some areas to improve, mostly generic stuff.

While this study did not indicate a significant difference in student-faculty interactions by place of residence, an interesting finding was that students who resided in the living-learning community reported lower levels of student-faculty interactions than

residence hall students (see Table 26, p. 131). This is particularly surprising since the faculty member for the living-learning community lived on-site, instructed a class, ate meals with students on a regular basis, participated in service-learning opportunities with the LLC residents and also was available and interacted with LLC residents throughout the day and evening. One possible explanation is that LLC students had higher expectations about faculty interaction than their peers in the residence hall. Another possible explanation is that LLC residents evaluated their expected level of interactions with faculty based upon their level of interaction with the LLC faculty member. This would have been an important question to address in the individual interviews.

Group Facilities, Clubs and Organizations

No significant differences were found among students in the three living areas on how students used campus facilities and their level of involvement with campus clubs and organizations. This was a surprising finding due to the large number of commuter students who attended the institution and the research that states that on campus students take greater advantage of campus resources and exhibit higher levels of involvement in campus activities (Chickering, 1974; Astin, 1977).

The university's urban location and largely commuter nature may offer insight into why significant differences in use of campus facilities and involvement in clubs and organizations were not found. The site institution is located in a large metropolitan area which, at the time of this study, ranked 4th in the nation in the number of city inhabitants and 10th in the nation using the urban agglomeration population, which includes inhabitants of the city and the adjacent suburban fringe (United Nations Statistics Division, 2002). The city was also listed as the 8th most congested city in the nation (Texas Transport Institute, 2005). Student comments provide insight on the impact of commuting to campus.

Table 26 Estimated Marginal Means for Quality of Effort Scales

		Academic and Intellectual Experiences					Facilities, Clubs and Organizations			Personal and Interpersonal Experiences				
		QElib	**QEcomput**	**QEcourse**	**QEwrite**	**QEsci**	**QEfacil**	**QEclub**	**QEamt**	**QEfac**	**QEstacq**	**QEcontps**	**QEconinf**	**QEpers**
Gender	Male	15.99	22.05	30.4	16.66	**21.12**	16.82	8.75	15.49	21.73	28.22	25.38	15.3	19.61
		5.33	5.99	6.21	4.93	7.47	3.38	3.8	6.31	7.18	7.38	6.69	4.24	5.96
	Female	**18.23**	**23.37**	**33.42**	**18.68**	19.12	**17.7**	**8.87**	**17.21**	**22.95**	**29.81**	**27.3**	**17.63**	**21.75**
		4.83	5.05	5.57	3.23	7.35	4.83	3.24	4.67	6.28	7.09	4.99	4.1	5.22
Race	White	17.47	**23.16**	**33.34**	**10.14**	**19.89**	16.81	**9.46**	**17.09**	**24.36**	**29.45**	**2.84**	**17.15**	**21.77**
		4.41	3.96	6.03	4.06	7.03	4.45	3.29	5.13	7.15	7.58	6.3	4.93	5.76
	non-White	**17.22**	22.88	31.98	18.1	19.5	**17.97**	8.47	16.45	21.21	29.3	25.91	16.84	20.67
		5.54	6	5.74	3.52	7.75	4.87	3.43	5.29	5.68	6.9	4.75	3.65	5.27
Residence	LLC	14.75	21.83	32.58	17.25	19.67	17	9	15.75	21.9	30.5	25.92	17.08	20.67
		3.86	5.71	5.23	3.33	9.93	3.93	2.69	5.91	4.78	6.89	5.03	3.5	5.3
	Res. Hall	18.03	**23.9**	**33.47**	**18.55**	**20.36**	**18.08**	**9.89**	**17.7**	**23.81**	**30.64**	**28.32**	**17.79**	**23.11**
		3.96	3.73	5.5	3.17	6.22	4.45	3.34	4.18	6.57	6.64	4.16	3.86	3.89
	Off-Campus	**18.33**	22.57	31.7	18.04	18.99	17.02	7.9	16.16	21.69	27.65	25.56	16.12	19.41
		6.06	6.12	6.49	4.41	7.52	5.25	3.47	5.8	7.04	7.62	6.62	4.8	6.37

Bold - Indicates highest mean in group

Top number - Estimated Marginal Mean

Bottom Number - Standard Deviation

Jake [Residence Hall]:

> *I could have commuted because I live 30 minutes away. But, compared to gas, especially with it going up, and traffic, stuff like that. Commuting isn't as good as living on campus because you don't get the full experience, plus it is easier to study. If you have to go to the library and study your professors are down the hall, not down the hall, but across the way so you don't have to go home and then come back.*

Suzy [LLC]:

> *I live 40 minutes away. I made the decision to live on campus because I hate to drive in traffic. It is a real pain. I would have to leave by 6:45am to get to my campus work job on time.*

Gloria [LLC]:

> *I do not live far away but it would be a hassle to commute.*

All three students indicated that traffic was a factor in their decision to live on campus. Commuters Felipe and Alberto also cited traffic issues which may help explain why no difference between use of campus facilities and involvement in clubs and organizations was found in this study.

Felipe [Off Campus]:

> *I try to avoid certain traffic hours. It can take an hour or more to get home sometimes, just different things like that. As far as people who don't live at home*

but commute, I imagine there is not much of a difference. I usually stay all day to avoid traffic.

Alberto [Off Campus]:

Well academically, I think that students living near or on the campus have more time to focus on their studies. Back at my house I get distracted with my parents and family issues, or maybe with my friends. I stay [on campus] until 4 and then drive back. No rush to go back. I study with friends before tests or do other activities.

Both off campus students indicated that traffic congestion induced them to spend the day on campus as opposed to going home between classes. Being on campus provided the opportunity to spend time at the library, socialize at the student center, meet with a faculty member, socialize with friends and take advantage of campus programs. For these students and possibly other off campus students, traffic congestion may have induced higher levels of campus involvement than would normally be expected of off campus students.

Alberto also offered another possible explanation for the lack of a significant difference in use of campus facilities and involvement in clubs and organizations. His comment suggests that off campus residents may exhibit higher levels of effort than would be expected of off campus students in order to be involved, stay connected with the university, and undergo the freshman experience typical of on campus students.

Alberto [Off Campus]:

Because I live off campus I have more school spirit because I want to see what the school has to offer.

Comparison of Quality of Effort to National Norms

This study examined whether a student's place of residence promoted higher levels of involvement in a variety of college activities associated with academic and social gains. Of particular interest was whether participation in the living-learning community encouraged higher levels of effort among its members. Limited evidence was found to suggest that students who resided in the on campus residence hall exhibited higher levels of effort on personal and interpersonal items. One explanation is that the university was providing educational processes that encourage student learning and development regardless of place of residence. One example was a weekly 90-minute "Odyssey" class for freshman students. The course was similar to a freshman orientation class and focuses on study skills, time management, university core values and other topics that help students adjust and transition to the university environment.

The presence of good educational processes was also supported by secondary analysis of the quality of effort scales compared to national averages for similar institutions as reported in the CSEQ 4th edition norms (see table 27, p. 135). On eleven of the thirteen quality of effort scales, the site institution exhibited significantly higher levels of effort ($p<.05$). On two scales, writing and scientific and quantitative experiences, no significant mean difference was detected between the site institution and national norms.

It should be noted that sampling bias may be a reason for the higher mean scores exhibited by the site institution in this comparison. As reported earlier, the participation rate for this survey was only 25.5%, and results of a t-test indicated significantly higher SAT scores between those students who participated in this study and those students who did not participate. It is possible that participation rates at institutions included in the

national mean score are much higher and more representative of the entire student body. Thus, the site institution's scores may include more select students than the national mean group, leading to higher means scores in the comparison.

Table 27 Comparison with National Group Mean

	ITEM	Site Institution Mean	Norm Group Mean	t-test	Significance Level	Effect Size[15]
Academic & Intellectual Experiences	QElib	**17.61**	16.21	2.35	.021	0.31
	QEcomput	**23.00**	21.12	3.08	.003	0.37
	QEcourse	**32.58**	30.65	2.79	.007	0.34
	QEwrite	18.12	**18.44**	-.727	.047	0.08
	QEsci	19.67	20.54	-.996	.323	0.12
Facilities, Clubs and Organizations	QEamt	**16.73**	14.55	3.56	.001	0.40
	QEfacil	**17.45**	17.30	.279	.781	0.03
	QEclubs	**8.91**	7.85	2.65	.010	0.31
Personal and Interpersonal Experiences	QEfac	**22.61**	20.53	2.70	.009	0.35
	QEpers	21.16	19.96	1.85	.068	0.23
	QEstacq	**29.37**	25.29	4.83	.000	0.60
	QEcontp	**26.77**	22.44	6.630	.000	0.74
	QEconinf	**16.98**	14.53	4.90	.000	0.66

15 Cohen's (1988) effect size definition for t-tests states that a value of .20 indicates a small effect size, .50 indicates a medium effect size and .80 indicates a large effect size.

Good Practice Indices	CaSI	25.02	23.84	1.86	.070	0.23
	S/FI	**28.04**	25.81	2.34	.022	0.30
	ALI	**54.89**	51.50	2.65	.010	0.35
College Environment	ENscholar	**17.46**	15.49	5.49	.000	0.64
	ENpersrel	**16.75**	15.91	2.25	.027	0.26
	ENprac	**22.00**	19.95	3.86	.000	0.49
Academic and Social Gains	GNpersdev	17.60	17.03	1.20	.234	0.14
	GNscitech	8.86	8.83	0.08	.933	0.01
	GNgened	**17.10**	13.94	7.45	.000	0.85
	GNvocprep	**8.43**	7.51	3.61	.001	0.43
	GNintelsk	**18.17**	16.49	3.89	.000	0.46

Note.
Bold – indicates significant difference at $p<.05$.

ACADEMIC AND SOCIAL GAINS

Students in the three living areas at the site institution reported no significant mean differences in self reported academic and social gains. The lack of significant difference does not mean that students did not perceive growth and development in these areas, only that place of residence was not a significant factor in this study. Students perceived their growth and development as "quite a bit" on the gains in personal development (GNpersdev), gains in general education (GNgened) and gains in intellectual skills (GNintelsk) scales and as "some" on the gains in science and technology knowledge (GNscitech) and gains in vocational preparation (GNvocprep) scales.

As a comparison, student perceptions of academic and social gains were significantly higher than the CSEQ national norms on three of the five gain scales (GNgened, GNvocprep, and GNintelsk) at the $p<.001$ significance level. No significant differences were detected for two scales (GNpersdev and GNscitech). Comments by Suzy and Sarah support students' perceived academic and social gains.

Suzy [LLC]:

> *I feel that being in [the LLC] I have grown a lot more, both intellectually and socially with others. It has helped me to be more open with people, because the university requires a certain amount of philosophy, and [the LLC] is basically another philosophy class but it is more in depth, and you have this service learning part also, so it is a hand's on class.*

Sarah [LLC]:

> *We are learning the same stuff. We're like being taught the same thing and growing in the same way, but not the same way. I 'm not sure how to explain it. We are discovering different truths because we are all different.*

PREDICTORS OF ACADEMIC AND SOCIAL GAINS

Place of Residence

Regression analysis indicated that place of residence was not a significant predictor of academic and social gain areas. The lack of significance in predicting academic gains is consistent with findings of Pascarella and Terenzini (1991) who report that there is little evidence to suggest that the knowledge acquisition or general cognitive effects of college are significantly related to living on campus. However, the lack of

significance in predicting social gains is inconsistent with literature that suggests that living on campus serves as a mechanism that promotes growth and development through interactions with faculty and peers (Pascarella and Terenzini, 1991).

Cooperation Among Students

The cooperation among student index (CaSI) was also a significant predictor of gains in personal development ($p<.001$). This index measured a student's effort in establishing quality relationships with peers. Higher levels of effort suggested that good educational practices which encourage student interaction were in place at the institution. Comments by Gloria and Sarah provide insight about the nature of peer interactions that occured in the living-learning community.

Gloria [LLC]:

> *Many students in my living environment are taking the same courses so it is really, really helpful during exams. You already have people that you know really well and you know how they are doing. Most know the strengths and weaknesses. You see them everyday, 'how did you do on the test or what am I supposed to study, or can you help explain this.' It is nice to have that support group right there.*

Sarah [LLC]:

> *[In the LLC], we support each other like when I had my ethics paper and I was really stressing out, and they were like 'you can do it, you can do it.'*

Student-Faculty Interaction

The student-faculty interaction index (SFI) measured a student's interaction with faculty members, focusing on interactions that induce higher levels of student effort with regard to academics. The index included items such as "asked a faculty member for help on improving writing skills," "discussed ideas about a term paper with a faculty member," or "worked harder to meet a faculty members expectations." Higher levels of effort suggest that good educational practices which encourage student-faculty interaction were in place at the institution. The student-faculty interaction index was a significant predictor of student gains in science and technology knowledge ($p<.05$). This is a significant finding to the extent that student success in the challenging science and technology classes may be influenced by quality interactions with the faculty member. The comment below is an example where student-faculty interaction might have helped the student with difficulties experienced in her science class.

Gloria [LLC]:

> *This semester I am going through a low point with chemistry because chemistry is pretty difficult. Basically the science courses are difficult. I found the sciences around here are more stringent than I ever thought they would be. I don't know if it is me or the way it was taught.*

Active Learning

The active learning index (ALI) measured a student's effort in being an active participant in one's own learning. The index was a measure of the individual student taking responsibility for his or her own learning and it was also a measure of institutional practices that promote and encourage active learning. The index consisted of items such as contributing to class discussions, applying materials learned in class to other courses,

reading additional books to gain more information on a subject or seeing how different facts and ideas fit together. Again, actions that induce higher levels of student effort were indicative of good educational practices.

This study reported evidence that active learning practices were significant predictors of gains in general education and gains in intellectual skills. The mean active learning index score for the site institution was also significantly higher ($p < .05$) than the mean active learning index score reported for the CSEQ national norms (see Table 27, p. 135). This is consistent with Astin's findings (1993), who reported that active learning processes are more frequently used at universities affiliated with the Roman Catholic Church and negatively correlated with institutional size.

The following comments provide insight into the level of active learning among students who participated in the study. The examples demonstrate student effort in applying information learned in class, initiative to attend extra-curricular activities to broaden one's viewpoint, and the realization that increased levels of effort are required to succeed at college.

Sarah [LLC]:

> *Ethics comes up a lot, but it is really fun. I think it is cool how you can have a discussion about something you actually learned, whereas in high school it's like, you know. I noticed that when I go back home and visit with friends that go to a community college, they haven't grown the same way. I discuss abortion and the death penalty, and they are like, 'wow'.*

Jake [Residence Hall]:

> *The campus lecture series has shown me more about my major, what you can do, also more about what is going on in the world. You get a different insight into something that you normally may not get insight into.*

Felipe [Off Campus]:

> *I went to public school and it was simple, I never got challenged. It was regurgitating – get your A or high B. But in college you have to work for it. When I get my grade back and look at my answers I realize that I could've done better than that. I can do better than this. I should work better. I can't just skim by like I used to. I have to work harder.*

A student's participation in his/her own learning process is linked to higher learning outcomes and increased personal development (Pace, 1988, Astin, 1993). In "What Matters in College," Astin (1993) writes that student-student interaction, student-faculty interaction and tutoring other students are activities that more fully engage the student in the learning process. The Learning Pyramid (1996) indicates that group discussion, practice by doing, and teaching others, produces higher levels of learning than do lecture or reading.

Participation in study groups and classroom discussions are activities that promote active learning as study groups and discussions encourage students to more deeply synthesize the information, relate it to other pieces of information and frame information in their own perspectives. Study group and classroom discussion also facilitates an environment that is conducive to learning, increases collaboration with peers, develops a sense of community between students and faculty, and provides opportunities for peer interaction on academic topics. Student comments indicated that they often take

advantage of study groups and allude that study groups and in-class discussion were encouraged in some classes but not others.

Sarah [LLC]:

> *I like to review what I've learned and then go into a group and say what I think it is, what is right. They can add to it or say 'no, it's not right'. In [the LLC] sometimes we do group study and help on paper and homework assignments. We also go to each other and ask questions if we don't understand.*

Suzy [LLC]:

> *For a test I usually study in a group. Sometimes I just go back and review my notes, and I do this by myself. Being in [the LLC] helps a lot. Part of my class is actual discussion,n and the director of [the LLC] leads this group. We do some discussion with [the LLC] group.*

Pete [Residence Hall]:

> *Psychology and Honors encourage study groups. Honors encourages dialogue during class. The majority of my classes don't really make mention of it. They don't really try to influence how you study, whatever works best for you.*

Felipe [Off Campus]:

> *I participated in group study in French class. It was difficult living off campus to participate in group study. My French partner and I did everything over the phone. Occasionally we would meet on campus.*

PREDICTORS OF COLLEGE GPA AND RETENTION

Student background variables and number of years enrolled accounted for 15.8% of the variance in predicting college GPA. This is consistent with studies that indicate that SAT score and high school GPA consistently explain the largest variance in college GPA (Bauer and Liang, 2003). The number of years enrolled was also a significant predictor of GPA suggesting that students are better at building upon knowledge learned in previous years, employing better time management and study skills or displaying increased levels of motivation to succeed. Terenzini, Pascarella, and Blimling (1996) found that students who lived in a living-learning community achieved higher GPA's. However, place of residence had no significant relationship with college GPA in this study.

Never-the-less, participation in the living-learning community was associated with higher levels of retention after controlling for gender, race, SAT score, high school GPA and current GPA. While living-learning community participants did not report higher levels of college GPA, the positive relationship with retention suggests that participation in the living-learning community helped students better adjust to college and to develop academic skills to aid in their success. According to Zekeri (2004), key academic skills include oral and written, problem solving, motivating and managing others, communication and interpersonal skills, and setting personal and academic goals.

This finding suggests that college success should not just be measured by college GPA, but also through the intangible growth and development that a student undergoes that promotes learning of essential skills to help the student adapt to the college environment. The association of the living-learning community with increased levels of retention is also consistent with the literature. Tinto (1985) for example, reports experiences that promote a students' social and intellectual orientation into the college community also strengthens their commitment and reinforces retention. GPA was also found to be a significant predictor of retention. This is consistent with literature indicating that poor academic performance negatively impacts persistence (Astin, 1993).

The study also found that being white had a significant negative association with retention. While this finding may be counter intuitive given national norms on retention, it is not surprising given higher educations' emphasis on helping non-White students succeed. The emphasis may be demonstrated at the campus level through a greater awareness of non-White student needs or through extra resources for non-White students. The notion or thought of "not succeeding" may not even occur to a White student, whereas this notion may be more common for non-White students and continually reinforced through high expectations by family members, friends, faculty and staff.

IMPLICATIONS FOR PRACTICE AT THE SITE INSTITUTION

1) Residence hall students exhibited significantly higher levels of effort on the personal experiences scale than did students living off campus. Although non-significant, living-learning community residents also exhibited higher levels of effort than did off campus students. Social interaction with peers is an essential aspect of student learning. The institution should concentrate on encouraging peer interaction and providing opportunities for off campus students to develop quality personal relationships within the campus community beyond the programs that now exist.

2) No differences in academic and social gains were found between the three living areas, implying that the institution is providing an environment where students perceive academic and social gains regardless of place of residence. This notion is supported by student comments and comparison of the site institution to national means. This is an important finding since the vast majority of students at the institution are commuter students.

3) While limited, statistically significant findings that associate place of residence with increased levels of effort were reported, students who live in the on campus residence hall generally engaged in higher levels of activities (See table 26, p. 131) than the off campus groups. Examining quality of effort levels for both the living-learning community and the residence hall together, in all areas except library use, living on campus promoted higher levels of involvement in campus related activities. Consistent with the literature, being on campus leads to more involvement, and helps to mediate formal and informal interactions with peers and faculty, socializing agents that have been associated with student gains. The institution should continue to construct additional on campus housing and develop more of a residential campus. Constructing additional on campus housing has already been identified in the campus master plan.

4) The institutional mission statement and comments from students imply that the university had high learning expectations in place. Consistent with good educational practices, the institution should continue to reinforce and promote high learning expectations for all students. The on campus residential facilities, classrooms, the lecture series, and the Odyssey class for freshman provide ideal settings to reinforce academic expectations.

5) Students value the involvement they have with faculty during in-class and out-of-class activities. While student comments provided examples of in-class interactions,

student-faculty interaction was only found to be a significant predictor for gains in science and technology knowledge. The institution should continue to reinforce the value of student-faculty contact. Out-of-class interactions can also be rewarding for the faculty member as well as for the student. While faculty may feel comfortable in academic areas, they may feel less comfortable interacting in social, out-of-class settings. Providing an orientation for faculty that emphasizes the value of out-of class interactions, and providing structured student-faculty activities may help ease reluctant faculty into participating in out-of class opportunities. Additionally, the institution could provide incentives for participating in out-of-class activities such as including the faculty's family members, assigning a student host, or including meals and parking with the activity.

6) With the exception of predicting GPA, student background characteristics had a minimal impact on academic and social gains as measured by the CSEQ. This supports Pace's notion that what students do at college and how they spend their time while in college is vitally more important to student success than pre-college activities.

7) The active learning index (ALI) was a significant factor in two of the five academic and social gain areas, and the cooperation among student index (CaSI) was a significant predictor in only one gain area. Chickering and Gamson (1987) identify active learning and cooperation among students as good educational practices. The institution should provide orientation for faculty on active and collaborative learning methods as a means to more fully engage students in the learning process. For example, faculty should encourage in-class discussion and group study. Students benefit by the deeper learning required to synthesize information needed to participate in class discussions and group study sessions. According to Levine and Shapiro (2000) "Faculty who are aware of the positive learning outcomes that come from student collaborations

frequently provide more structured opportunities for students to work together on projects" (p. 16).

8) Race was not a factor in how students view the college environment, in the level of effort scales or in the self reported academic and social gains. This suggests that non-White students felt a part of the community and that they succeed at similar levels to White students on scales measured on the CSEQ. However, White students were at a disadvantage when retention was examined. This is an area that requires further inquiry.

9) Service learning, such as the service learning component of the living-learning community, provides the opportunity for students to apply academic concepts to real world issues and develop extrinsically oriented values. Service learning opportunities should be made widely available and promoted to all students who attend the university.

10) Continue to offer the Odyssey course for incoming freshman. The course provides an opportunity for all freshmen to have a common, unifying experience and also learn about the values and expectations of the institution. The course helps students transition to the institution and helps students make connections with faculty, other students, staff, community members and the values of the institution.

11) Continue to provide programs and services that promote student involvement. The programs and services promoting student involvement assist with student growth and development, provide opportunities for interaction and help build a sense of attachment to the institution. Given the number of commuter students attending the institution, such programs and services should be offered at times conducive to attracting off campus students.

12) The CSEQ measured student response to the 13 quality of effort scales on a 4-point scale, with a value of "1" representing "never," a value of "2" representing "occasionally," a value of "3" representing "often" and a value of "4" representing "very

often." Interpreting the mean quality of effort scores (see table 27, p. 135) showed that students rated their level of effort as being between "occasionally" and "often" for the following quality of effort scales: QElib, QEcomput, QEcourse, QE, write, QEfacil, QEamt, QEfac, QEstacq, QEcontps, QEconinf, and QEpers. Analysis of the mean Quality of effort score for QEsci and QEclubs revealed that students rated their level of effort as being between "never" and "occasionally" for these two scales. Table 26 (p. 131) also provides a break down by living unit for each quality of effort scale. The CSEQ quality of effort results can be used by the institution to tailor specific programs to increase student effort. While the quality of effort means for the institution were higher than national norms, focusing on programs and processes that induce higher levels of student effort would benefit the student learning process. For example, providing orientation classes on how to maximize use of library resources, encouraging faculty to assign references found in the library as part of course work or encouraging students to study in the library might induce higher levels of effort on the library scale.

TOPICS FOR FUTURE RESEARCH

The results of this study suggest the need for additional research addressing the relationship between place of residence and student outcomes.

First, this study only provides a snapshot of student perceptions of the college environment, levels of effort and academic and social gains. A study that tracks individuals throughout their college career would be valuable in understanding potential long-term effects of place of residence on gains. It would possibly help the institution quantify whether participation in a particular living arrangement provides students with an advantage that stays with them throughout their college careers. A longitudinal study would also allow the university to evaluate the effects of specific programs that are in

place from year to year and their relationship with various student outcomes. Additionally, this study found that number of years enrolled was a significant predictor of college GPA. A longitudinal study might provide insight into factors that are associated with this finding.

Second, surveying incoming students to learn more about what they expect from college would provide valuable information. While the literature associates various educational practices with learning outcomes, it would be important for the institution to better understand student expectations with regard to educational practices so that programs and resources can be better matched.

Third, institutional data on GPA and retention rates compared participants in the living-learning community (LLC) with non-participants. The Non-LLC group combined both residence hall and off campus students. An analysis of GPA and retention rates by the three groups (living-learning community, residence hall and off campus) would provide further insight into which students are succeeding at the institution allowing resources to be concentrated towards a particular group. Additional research addressing why White students are retained at lower rates than non-White students would also provide valuable information for the institution.

Fourth, this study reported quality of effort differences related to interactions between gender and race for the topics of conversations (QEcontps) and information in conversation (QEconinf) scales. A further examination of the literature regarding gender and race with regard to these issues and investigation into the differences found in this study is warranted.

CONCLUSION

The primary focus of this study was to evaluate whether place of residence played a role in a student's perception of the campus environment, level of effort on activities associated with college success, and achievement as measured by CSEQ academic and social gain scales, college GPA and retention data. No differences among the three residential groups were detected in a student's overall satisfaction with the university environment or in social and academic gains measured on the CSEQ. Residence hall students perceived the environment to emphasize scholarly attributes and both the living learning community and residence hall groups perceived the environment to emphasize the practical environment. With a few exceptions, place of residence was not significantly associated with higher levels of effort.

Consistent with the literature, differences in effort that were detected were of the personal and interpersonal nature. Residence hall students exhibited higher levels of personal and interpersonal experiences than either the living-learning or off campus groups. The good educational practice indices were significant predictors in four of the five gain scales. Participation in the living-learning community was also associated with higher odds of being retained. With limited exceptions, student background characteristics did not play a significant role in student success, supporting Pace's notion that what a student does at college is more important than what they did before they entered college. As a whole, the results suggested that the university was providing an environment that promoted equal levels of satisfaction, effort, and gains regardless of place of residence.

In one sense this finding is comforting to the extent that off campus residents report similar experiences and gains to their on campus peers. The finding reinforces

current programs and services in place at the institution to serve all students regardless of place of residence. It does raise an interesting question as to whether on campus housing is meeting its full potential in helping students maximize learning outcomes. A challenge for the institution will be to examine this question while at the same time, continuing its efforts to fully engage off campus students. Kuh's (1996) ideal of a "seamless" learning environment can be obtained through pursuit of Chickering and Gamson's (1987) good educational practices. Faculty, staff and students all have an essential role in creating a community of learners. The pursuit of good educational practices will help ensure that current and future students, regardless of place of residence, are engaging in deeper levels of learning.

Appendices

APPENDIX A INVITATION LETTER

April 12, 2005

Dear <<Fname>>,

My name is Doug Garrard and I am a doctoral student in the Department of Higher Educational Administration at the University of Texas at Austin. I am conducting research exploring how freshmen students at the University of St. Thomas are affected by their college experience. You are invited to participate in this important research.

Participation involves completing an on-line multiple-choice questionnaire. The questionnaire assesses your perceptions of your living environment, the academic environment, programs and services, and your overall experience as a student at St. Thomas University. Your input will be invaluable to the University of St. Thomas and my dissertation.

If you volunteer to complete the questionnaire you should know that there are no risks from participating in this study. You can decide to stop at any time and your responses on your completed survey are completely confidential and can not be tracked back to you in any manner. The attached form provides more information about the study

To complete the survey, go to the following link: http://www.cseq.org
and type <<LOGIN ID>> in the Login ID box.

Additionally, I would like the opportunity to discuss your experiences in person. If you would like to participate in an individual interview in addition to completing the on-line survey, please contact me at 512-475-8885 or email me at Garrardd@austin.utexas.edu. Individuals selected for an individual interview will receive $5.00.

Thank you for your consideration. I hope that you will be willing to participate and assist with this important study. Additional information about my research is below

Sincerely,
Doug Garrard
Ed.D Candidate
The University of Texas at Austin

Information about the On-Line
College Student Experiences Questionnaire

Title of Research Study: The Relationship of a Student's Choice of Living Arrangement on Student Effort, Achievement and Satisfaction.

Principle Investigator: Douglas Garrard, Doctoral Student, Department of Higher Educational Administration, The University of Texas at Austin, 512-475-8885. Garrardd@austin.utexas.edu

Faculty Sponsor: James Duncan, Ed.D, Ashbel Smith Professor, Department of Higher Educational Administration, The University of Texas at Austin, 512-471-7551

Funding source: Douglas Garrard

What is the purpose of this study? This study examines how a student's place of residence impacts various learning outcomes. This study will evaluate how effort, achievement and satisfaction are affected by the student's place of residence.

What will be done if you take part in this research study? During the Spring 2005 semester you will be asked to complete an on-line survey that explores various aspects of your undergraduate experience. The survey will take approximately 20 minutes to complete.

How many times and in what format will you be contacted by the researcher? Electronic mail will be used to send an invitation to participate in the research study. Two reminder emails will also be sent.

Why does the survey ask me to provide information about my race, gender, high school GPA, SAT score and Parent's Income? This information is being collected to allow the researcher to more completely analyze data that are collected.

What does the interview involve? If you choose you can also participate in an individual interview held that will be conducted on the UST campus. The interview will further explore your experiences as a student at the University of St. Thomas. The interview will last approximately 45 minutes and you will also be asked to sign a consent form.

What are the possible discomforts and risks? The potential risks for you are minimal. If you consent to participate in the on-line survey, the information you provide will be

reported in summary format only and will neither identify you nor identify your responses to the survey. Your responses to the survey are completely anonymous.

What are the possible benefits to you or to others? Your participation may benefit you by increasing your understanding of factors that are associated with your academic success. Administrators at the University of St. Thomas will also benefit by increasing their understanding of factors that promote higher levels of student engagement in the overall learning process. These benefits will outweigh any minimal risks associated with the study.

If you do not want to take part in this study, what other options are available to you? Participation in this study is entirely voluntary. You are free to refuse to participate in this study, and your refusal will not influence current or future relationships with the University of St. Thomas.

THIS RESEARCH HAS BEEN REVIEWED AND APPROVED BY THE HUMAN SUBJECTS COMMITTEE AT THE UNIVERSITY OF ST. THOMAS AND THE UNIVERSITY OF TEXAS AT AUSTIN.

For additional information concerning your rights as a human subject please contact:

Dr. Kurt Geisinger, Vice President for Academic Affairs, University of St. Thomas, (713) 525-2164. (#HSC 0405)

Dr. Clarke A. Burnham, Chair, The University of Texas at Austin Institutional Review Board for the Protection of Human Subjects, (512) 232-4383. (IRB# 2004-7-75)

APPENDIX B INFORMED CONSENT

IRB# 2004-7-75

Informed Consent to Participate in Research

The University of Texas at Austin

You are being asked to participate in a research study. This form provides you with information about the study. The Principal Investigator (the person in charge of this research) or his representative will also describe this study to you and answer all of your questions. Please read the information below and ask questions about anything you don't understand before deciding whether or not to take part. Your participation is entirely voluntary and you can refuse to participate without penalty or loss of benefits to which you are otherwise entitled.

Title of Research Study:

THE RELATIONSHIP OF A STUDENT'S CHOICE OF LIVING ARRANGEMENT ON STUDENT EFFORT, ACHIEVEMENT AND SATISFACTION.

Principal Investigator(s) (include faculty sponsor), UT affiliation, and Telephone Number(s):

Principle Investigator
Douglas Garrard, Doctoral Student, Department of Higher Educational Administration, The University of Texas at Austin, Work: 512-475-8885 or Home: 512-259-4232

Faculty Sponsor
James Duncan, Ed.D, Ashbel Smith Professor, Department of Higher Educational Administration, The University of Texas at Austin, 512-471-7551

Funding source:

Douglas Garrard

What is the purpose of this study?

This study examines how a student's place of residence impacts various learning outcomes. This study will evaluate how effort, achievement and satisfaction are affected by the student's place of residence.

What will be done if you take part in this research study?

During the Spring 2005 semester you will be asked to complete an on-line survey that explores various aspects of your undergraduate experience. The survey will take approximately 20 to 30 minutes to complete. You will also have the opportunity to volunteer to participate in an individual interview to gain further information about your experiences at the University of St. Thomas. The interview will take approximately 45 to 60 minutes to complete.

What are the possible discomforts and risks?

The potential risks for you are minimal. Information from the CSEQ survey will be reported in summary format only and will neither identify you nor identify your responses to the survey. Physical and social risks of participating in the study will also be minimized because interviews will take place on a one-on-one basis. You will be asked questions that are non-threatening and easy to answer based on your own experiences at the University of St. Thomas, therefore, psychological risk is minimal. In the event that you experience discomfort, the researcher will provide you with contact information about campus resources. The information utilized in this study will be published in a dissertation, identifying no individual's information. Research data from the interviews will be held on cassette tape, locked at the principle investigator's residence in Austin, Texas. You may ask questions about the study or potential risks by contacting the principal investigator, listed on the front page of this form

What are the possible benefits to you or to others?

The primary benefits from this study will accrue to the University of St. Thomas and future first-year students who attend the institution. Administrators at the University of St. Thomas will benefit by increasing their understanding of factors that promote higher levels of student engagement in the overall learning process. Your participation may also benefit you by increasing your understanding of factors that are associated with academic success. These benefits will outweigh any minimal risks associated with the study.

If you choose to take part in this study, will it cost you anything?

There is no cost involved in participating in this study

Will you receive compensation for your participation in this study?

You will receive $5.00 if you volunteer and are randomly selected to participate in an individual interview.

What if you are injured because of the study?

There is minimal risk of injury due to participating in this study. No medical treatment will be provided to you or available in case of injury as a result of participation in this study, and no payment can be provided in the event of a medical problem.

If you do not want to take part in this study, what other options are available to you?

Participation in this study is entirely voluntary. You are free to refuse to participate in this study, and your refusal will not influence current or future relationships with the University of St. Thomas.

How can you withdraw from this research study and who should I call if I have questions?

If you wish to stop your participation in this research study for any reason, you should contact: Doug Garrard at 512-475-8885 (office), 512-259-4232 (home) or Garrardd@austin.utexas.edu. You may also contact the supervising professor, Dr. James Duncan at 512-471-7551. You are free to withdraw your consent and stop participation in this research study at any time without penalty or loss of benefits for which you may be entitled. Throughout the study, the researchers will notify you of new information that may become available and that might affect your decision to remain in the study.

In addition, if you have questions about your rights as a research participant, please contact Clarke A. Burnham, Ph.D., Chair, The University of Texas at Austin Institutional Review Board for the Protection of Human Subjects, 512/232-4383.

How will your privacy and the confidentiality of your research records be protected?

Authorized persons from The University of Texas at Austin and the Institutional Review Board have the legal right to review your research records and will protect the

confidentiality of those records to the extent permitted by law. If the research project is sponsored then the sponsor also has the legal right to review your research records. Otherwise, your research records will not be released without your consent unless required by law or a court order.

If the results of this research are published or presented at scientific meetings, your identity will not be disclosed.

You will be assigned a code number which will be used in conjunction with survey and interview information entered into a database. You will not be named or identified and will be referred to by this number. Interviews will be taped by the researcher. The researcher is asking permission from you to have the interview recorded. The tapes will be listened to by the researcher, Doug Garrard, as well as by a professional transcriber. The cassettes as well as the code file will be kept under lock and key at the researcher's residence in Austin, Texas.

Do you consent to having your interview audio taped?

_____ YES, I agree to have my interview taped.

Signature of Participant

_____ NO, I do not agree to have my interview taped.

Signature of Participant

Will the researchers benefit from your participation in this *study*

The researcher will not benefit from your participation in this study.

Will the researcher provide a copy of this consent?

You will be provided with a copy of this consent form for your records if you participate in an individual interview.

Signatures:

As a representative of this study, I have explained the purpose, the procedures, the benefits, and the risks that are involved in this research study:

Signature and printed name of person obtaining consent

Date

You have been informed about this study's purpose, procedures, possible benefits and risks, and you have received a copy of this Form. You have been given the opportunity to ask questions before you sign, and you have been told that you can ask other questions at any time. You voluntarily agree to participate in this study. By signing this form, you are not waiving any of your legal rights.

_____

Printed Name of Subject

Date

_____

Signature of Subject **Date**

_____

Signature of Principal Investigator **Date**

THIS RESEARCH HAS BEEN REVIEWED AND APPROVED BY THE HUMAN SUBJECTS COMMITTEE AT THE UNIVERSITY OF ST. THOMAS. For additional information concerning your rights as a human subject please contact Dr. Kurt Geisinger, Vice President for Academic Affairs, (713) 525-2164.

APPENDIX C CSEQ SURVEY

CSEQ

College Student Experiences Questionnaire

This questionnaire asks about how you spend your time at college--with faculty and friends and in classes, social and cultural activities, extracurricular activities, employment, and use of campus facilities such as the library and student center. The usefulness of this or any other survey depends on the thoughtful responses of those who are asked to complete it. Your participation is very important and greatly appreciated.

The information obtained from you and other students at many different colleges and universities will help administrators, faculty members, student leaders, and others to improve the conditions that contribute to your learning and development and to the quality of the experience of those who will come after you.

At first glance, you may think it will take a long time to complete this questionnaire, but it can be answered in about 30 minutes or less. And you will learn some valuable things about yourself, as your answers provide a kind of self-portrait of what you have been doing and how you are benefitting from your college experience.

You do not have to write your name on the questionnaire. But as you will see on the next page we would like to know some things about you so that we can learn how college experiences vary, depending on students' age, sex, year in college, major field, where they live, whether they have a job, and so forth. To know where the reports come from, a number on the back page identifies your institution.

Your questionnaire will be read by an electronic scanning device, so be careful in marking your responses. **Please use only a #2 black lead pencil.** Do not write or make any marks on the questionnaire outside the spaces provided for your answers. Erase cleanly any responses you want to change. **It is very important to answer all questions;** if you are uncertain about what a question means, use your best judgment.

Thank you for your cooperation and participation!

This questionnaire is available from the Indiana University Center for Postsecondary Research and Planning, School of Education, 201 North Rose Avenue, Bloomington, IN 47405-1006. It is for use by individuals and institutions interested in documenting, understanding, and improving the student experience.

BACKGROUND INFORMATION

DIRECTIONS: Indicate your response by filling in the appropriate oval next to the correct answer.

Age

- ○ 19 or younger
- ○ 20 - 23
- ○ 24 - 29
- ○ 30 - 39
- ○ 40 - 55
- ○ Over 55

Sex

- ○ male
- ○ female

What is your marital status?

- ○ not married
- ○ married
- ○ divorced
- ○ separated
- ○ widowed

What is your classification in college?

- ○ freshman/first-year
- ○ sophomore
- ○ junior
- ○ senior
- ○ graduate student
- ○ unclassified

Did you begin college here or did you transfer here from another institution?

- ○ started here
- ○ transferred from another institution

Where do you now live during the school year?

- ○ dormitory or other campus housing
- ○ residence (house, apartment, etc.) within walking distance of the institution
- ○ residence (house, apartment, etc.) within driving distance
- ○ fraternity or sorority house

With whom do you live during the school year? (Fill in all that apply)

- ○ no one, I live alone
- ○ one or more other students
- ○ my spouse or partner
- ○ my child or children
- ○ my parents
- ○ other relatives
- ○ friends who are not students at the institution I'm attending
- ○ other people: who?

Do you have access to a computer where you live or work, or nearby that you can use for your school work?

- ○ yes
- ○ no

What have most of your grades been up to now at this institution?

- ○ A
- ○ A-, B+
- ○ B
- ○ B-, C+
- ○ C, C-, or lower

Which of these fields best describes your major, or your anticipated major? You may indicate more than one if applicable.

- ○ Agriculture
- ○ Biological/life sciences (biology, biochemistry, botany, zoology, etc.)
- ○ Business (accounting, business administration, marketing, management, etc.)
- ○ Communication (speech, journalism, television/radio, etc.)
- ○ Computer and information sciences
- ○ Education
- ○ Engineering
- ○ Ethnic, cultural studies, and area studies
- ○ Foreign languages and literature (French, Spanish, etc.)
- ○ Health-related fields (nursing, physical therapy, health technology, etc.)
- ○ History
- ○ Humanities (English, literature, philosophy, religion, etc.)
- ○ Liberal/general studies
- ○ Mathematics
- ○ Multi/interdisciplinary studies (international relations, ecology, environmental studies, etc.)
- ○ Parks, recreation, leisure studies, sports management
- ○ Physical sciences (physics, chemistry, astronomy, earth science, etc.)
- ○ Pre-professional (pre-dental, pre-medical, pre-veterinary)
- ○ Public administration (city management, law enforcement, etc.)
- ○ Social sciences (anthropology, economics, political science, psychology, sociology, etc.)
- ○ Visual and performing arts (art, music, theater, etc.)
- ○ Undecided
- ○ Other: What?

Did either of your parents graduate from college?

- ○ no
- ○ yes, both parents
- ○ yes, father only
- ○ yes, mother only
- ○ don't know

Do you expect to enroll for an advanced degree when, or if, you complete your undergraduate degree?

- ○ yes
- ○ no

How many credit hours are you taking this term?

- ○ 6 or fewer
- ○ 7 - 11
- ○ 12 - 14
- ○ 15 - 16
- ○ 17 or more

During the time school is in session, about how many hours a week do you usually spend outside of class on activities related to your academic program, such as studying, writing, reading, lab work, rehearsing, etc.?

- ○ 5 or fewer hours a week
- ○ 6 - 10 hours a week
- ○ 11 - 15 hours a week
- ○ 16 - 20 hours a week
- ○ 21 - 25 hours a week
- ○ 26 - 30 hours a week
- ○ more than 30 hours a week

During the time school is in session, about how many hours a week do you usually spend working on a job for pay? To provide information about your work experiences on and off campus, fill in one oval in each column.

	ON-CAMPUS	OFF-CAMPUS
None; I don't have a job	○	○
1 - 10 hours a week	○	○
11 - 20 hours	○	○
21 - 30 hours	○	○
31 - 40 hours	○	○
More than 40 hours	○	○

If you have a job, how does it affect your school work?

- ○ I don't have a job
- ○ My job does not interfere with my school work
- ○ My job takes some time from my school work
- ○ My job takes a lot of time from my school work

How do you meet your college expenses? Fill in the response that best approximates the amount of support from each of the various sources.

	None	Very Little	Less Than Half	About Half	More Than Half	All or Nearly All
Self (job, savings, etc.)	○	○	○	○	○	○
Parents	○	○	○	○	○	○
Spouse or partner	○	○	○	○	○	○
Employer support	○	○	○	○	○	○
Scholarships and grants	○	○	○	○	○	○
Loans	○	○	○	○	○	○
Other sources	○	○	○	○	○	○

What is your racial or ethnic identification? (Fill in all that apply)

- ○ American Indian or other Native American
- ○ Asian or Pacific Islander
- ○ Black or African American
- ○ Caucasian (other than Hispanic)
- ○ Mexican American
- ○ Puerto Rican
- ○ Other Hispanic
- ○ Other: What? →

COLLEGE ACTIVITIES

DIRECTIONS: In your experience at this institution during the current school year, about how often have you done each of the following? Indicate your response by filling in one of the ovals to the right of each statement.

Library	Never	Occasionally	Often	Very Often
Used the library as a quiet place to read or study materials you brought with you.	○	○	○	○
Found something interesting while browsing in the library.	○	○	○	○
Asked a librarian or staff member for help in finding information on some topic.	○	○	○	○
Read assigned materials other than textbooks in the library (reserve readings, etc.).	○	○	○	○
Used an index or database (computer, card catalog, etc.) to find material on some topic.	○	○	○	○
Developed a bibliography or reference list for a term paper or other report.	○	○	○	○
Gone back to read a basic reference or document that other authors referred to.	○	○	○	○
Made a judgment about the quality of information obtained from the library, World Wide Web, or other sources.	○	○	○	○

Computer and Information Technology	Never	Occasionally	Often	Very Often
Used a computer or word processor to prepare reports or papers.	○	○	○	○
Used e-mail to communicate with an instructor or other students.	○	○	○	○
Used a computer tutorial to learn material for a course or developmental/remedial program.	○	○	○	○
Participated in class discussions using an electronic medium (e-mail, list serve, chat group, etc.).	○	○	○	○
Searched the World Wide Web or Internet for information related to a course.	○	○	○	○
Used a computer to retrieve materials from a library not at this institution.	○	○	○	○
Used a computer to produce visual displays of information (charts, graphs, spreadsheets, etc.).	○	○	○	○
Used a computer to analyze data (statistics, forecasting, etc.).	○	○	○	○
Developed a Web page or multimedia presentation.	○	○	○	○

DIRECTIONS: In your experience at this institution during the current school year, about how often have you done each of the following? Indicate your response by filling in one of the ovals to the right of each statement.

	Never	Occasionally	Often	Very Often
Course Learning				
Completed the assigned readings for class.	○	○	○	○
Took detailed notes during class.	○	○	○	○
Contributed to class discussions.	○	○	○	○
Developed a role play, case study, or simulation for a class.	○	○	○	○
Tried to see how different facts and ideas fit together.	○	○	○	○
Summarized major points and information from your class notes or readings.	○	○	○	○
Worked on a class assignment, project, or presentation with other students.	○	○	○	○
Applied material learned in a class to other areas (your job or internship, other courses, relationships with friends, family, co-workers, etc.).	○	○	○	○
Used information or experience from other areas of your life (job, internship, interactions with others) in class discussions or assignments.	○	○	○	○
Tried to explain material from a course to someone else (another student, friend, co-worker, family member)	○	○	○	○
Worked on a paper or project where you had to integrate ideas from various sources.	○	○	○	○
Writing Experiences				
Used a dictionary or thesaurus to look up the proper meaning of words.	○	○	○	○
Thought about grammar, sentence structure, word choice, and sequence of ideas or points as you were writing.	○	○	○	○
Asked other people to read something you wrote to see if it was clear to them.	○	○	○	○
Referred to a book or manual about writing style, grammar, etc.	○	○	○	○
Revised a paper or composition two or more times before you were satisfied with it.	○	○	○	○
Asked an instructor or staff member for advice and help to improve your writing.	○	○	○	○
Prepared a major written report for a class (20 pages or more).	○	○	○	○

	Never	Occasionally	Often	Very Often
Experiences with Faculty				
Talked with your instructor about information related to a course you were taking (grades, make-up work, assignments, etc.).	○	○	○	○
Discussed your academic program or course selection with a faculty member.	○	○	○	○
Discussed ideas for a term paper or other class project with a faculty member.	○	○	○	○
Discussed your career plans and ambitions with a faculty member.	○	○	○	○
Worked harder as a result of feedback from an instructor.	○	○	○	○
Socialized with a faculty member outside of class (had a snack or soft drink, etc.).	○	○	○	○
Participated with other students in a discussion with one or more faculty members outside of class.	○	○	○	○
Asked your instructor for comments and criticisms about your academic performance.	○	○	○	○
Worked harder than you thought you could to meet an instructor's expectations and standards.	○	○	○	○
Worked with a faculty member on a research project.	○	○	○	○
Art, Music, Theater				
Talked about art (painting, sculpture, artists, etc.) or the theater (plays, musicals, dance, etc.) with other students, friends, or family members.	○	○	○	○
Went to an art exhibit/gallery or a play, dance, or other theater performance, on or off the campus.	○	○	○	○
Participated in some art activity (painting, pottery, weaving, drawing, etc.) or theater event, or worked on some theatrical production (acted, danced, worked on scenery, etc.), on or off the campus.	○	○	○	○
Talked about music or musicians (classical, popular, etc.) with other students, friends, or family members.	○	○	○	○
Attended a concert or other music event, on or off the campus.	○	○	○	○
Participated in some music activity (orchestra, chorus, dance, etc.) on or off the campus.	○	○	○	○
Read or discussed the opinions of art, music, or drama critics.	○	○	○	○

DIRECTIONS: In your experience at this institution during the current school year, about how often have you done each of the following? Indicate your response by filling in one of the ovals to the right of each statement.

	Very Often	Often	Occasionally	Never
Campus Facilities				
Used a campus lounge to relax or study by yourself.	○	○	○	○
Met other students at some campus location (campus center, etc.) for a discussion.	○	○	○	○
Attended a cultural or social event in the campus center or other campus location.	○	○	○	○
Went to a lecture or panel discussion.	○	○	○	○
Used a campus learning lab or center to improve study or academic skills (reading, writing, etc.)	○	○	○	○
Used campus recreational facilities (pool, fitness equipment, courts, etc.).	○	○	○	○
Played a team sport (intramural, club, intercollegiate).	○	○	○	○
Followed a regular schedule of exercise or practice for some recreational sporting activity.	○	○	○	○
Clubs and Organizations				
Attended a meeting of a campus club, organization, or student government group.	○	○	○	○
Worked on a campus committee, student organization, or project (publications, student government, special event, etc.).	○	○	○	○
Worked on an off-campus committee, organization, or project (civic group, church group, community event, etc.).	○	○	○	○
Met with a faculty member or staff advisor to discuss the activities of a group or organization.	○	○	○	○
Managed or provided leadership for a club or organization, on or off the campus.	○	○	○	○
Personal Experiences				
Told a friend or family member why you reacted to another person the way you did.	○	○	○	○
Discussed with another student, friend, or family member why some people get along smoothly, and others do not.	○	○	○	○
Asked a friend for help with a personal problem.	○	○	○	○
Read articles or books about personal growth, self-improvement, or social development.	○	○	○	○
Identified with a character in a book, movie, or television show and wondered what you might have done under similar circumstances.	○	○	○	○
Taken a test to measure your abilities, interests, or attitudes.	○	○	○	○
Asked a friend to tell you what he or she really thought about you.	○	○	○	○
Talked with a faculty member, counselor or other staff member about personal concerns.	○	○	○	○

	Very Often	Often	Occasionally	Never
Student Acquaintances				
Became acquainted with students whose interests were different from yours.	○	○	○	○
Became acquainted with students whose family background (economic, social) was different from yours.	○	○	○	○
Became acquainted with students whose age was different from yours.	○	○	○	○
Became acquainted with students whose race or ethnic background was different from yours.	○	○	○	○
Became acquainted with students from another country.	○	○	○	○
Had serious discussions with students whose philosophy of life or personal values were very different from yours.	○	○	○	○
Had serious discussions with students whose political opinions were very different from yours.	○	○	○	○
Had serious discussions with students whose religious beliefs were very different from yours.	○	○	○	○
Had serious discussions with students whose race or ethnic background was different from yours.	○	○	○	○
Had serious discussions with students from a country different from yours.	○	○	○	○
Scientific and Quantitative Experiences				
Memorized formulas, definitions, technical terms and concepts.	○	○	○	○
Used mathematical terms to express a set of relationships.	○	○	○	○
Explained your understanding of some scientific or mathematical theory, principle or concept to someone else (classmate, co-worker, etc.)	○	○	○	○
Read articles about scientific or mathematical theories or concepts in addition to those assigned for a class.	○	○	○	○
Completed an experiment or project using scientific methods.	○	○	○	○
Practiced to improve your skill in using a piece of laboratory equipment.	○	○	○	○
Showed someone else how to use a piece of scientific equipment.	○	○	○	○
Explained an experimental procedure to someone else.	○	○	○	○
Compared the scientific method with other methods for gaining knowledge and understanding.	○	○	○	○
Explained to another person the scientific basis for concerns about scientific or environmental issues (pollution, recycling, alternative sources of energy, acid rain) or similar aspects of the world around you.	○	○	○	○

5

CONVERSATIONS

DIRECTIONS: In conversations with others (students, family members, co-workers, etc.) outside the classroom *during this school year*, about how often have you talked about each of the following?

Topics of Conversation	Never	Occasionally	Often	Very Often
Current events in the news.	○	○	○	○
Social issues such as peace, justice, human rights, equality, race relations.	○	○	○	○
Different lifestyles, customs, and religions.	○	○	○	○
The ideas and views of other people such as writers, philosophers, historians.	○	○	○	○
The arts (painting, poetry, dance, theatrical productions, symphony, movies, etc.).	○	○	○	○
Science (theories, experiments, methods, etc.).	○	○	○	○
Computers and other technologies.	○	○	○	○
Social and ethical issues related to science and technology such as energy, pollution, chemicals, genetics, military use.	○	○	○	○
The economy (employment, wealth, poverty, debt, trade, etc.).	○	○	○	○
International relations (human rights, free trade, military activities, political differences, etc.).	○	○	○	○

Information in Conversations	Never	Occasionally	Often	Very Often
Referred to knowledge you acquired in your reading or classes.	○	○	○	○
Explored different ways of thinking about the topic	○	○	○	○
Referred to something one of your instructors said about the topic.	○	○	○	○
Subsequently read something that was related to the topic.	○	○	○	○
Changed your opinion as a result of the knowledge or arguments presented by others.	○	○	○	○
Persuaded others to change their minds as a result of the knowledge or arguments you cited.	○	○	○	○

READING/WRITING

During this current school year, about how many books have you read? Fill in one response for each item listed below.	More than 20	Between 10 and 20	Between 5 and 10	Fewer than 5	None
Textbooks or assigned books	○	○	○	○	○
Assigned packs of course readings	○	○	○	○	○
Non-assigned books	○	○	○	○	○

During this current school year, about how many exams, papers, or reports have you written? Fill in one response for each item listed below.	More than 20	Between 10 and 20	Between 5 and 10	Fewer than 5	None
Essay exams for your courses	○	○	○	○	○
Term papers or other written reports	○	○	○	○	○

OPINIONS ABOUT YOUR COLLEGE OR UNIVERSITY

How well do you like college?

- ○ I am enthusiastic about it.
- ○ I like it.
- ○ I am more or less neutral about it.
- ○ I don't like it.

If you could start over again, would you go to the same institution you are now attending?

- ○ Yes, definitely
- ○ Probably yes
- ○ Probably no
- ○ No, definitely

THE COLLEGE ENVIRONMENT

Colleges and universities differ from one another in the extent to which they emphasize or focus on various aspects of students' development. Thinking of your experience at this institution, to what extent do you feel that each of the following is emphasized? The responses are numbered from 7 to 1, with the highest and lowest points illustrated. Fill in the oval with the number that best represents your impression on each of the following seven-point rating scales.

Emphasis on developing academic, scholarly, and intellectual qualities

Strong Emphasis ⑦ ⑥ ⑤ ④ ③ ② ① Weak Emphasis

Emphasis on developing aesthetic, expressive, and creative qualities

Strong Emphasis ⑦ ⑥ ⑤ ④ ③ ② ① Weak Emphasis

Emphasis on developing critical, evaluative, and analytical qualities

Strong Emphasis ⑦ ⑥ ⑤ ④ ③ ② ① Weak Emphasis

Emphasis on developing an understanding and appreciation of human diversity

Strong Emphasis ⑦ ⑥ ⑤ ④ ③ ② ① Weak Emphasis

Emphasis on developing information literacy skills (using computers, other information resources)

Strong Emphasis ⑦ ⑥ ⑤ ④ ③ ② ① Weak Emphasis

Emphasis on developing vocational and occupational competence

Strong Emphasis ⑦ ⑥ ⑤ ④ ③ ② ① Weak Emphasis

Emphasis on the personal relevance and practical value of your courses

Strong Emphasis ⑦ ⑥ ⑤ ④ ③ ② ① Weak Emphasis

The next three ratings refer to relations with people at this college. Again, thinking of your own experience, please rate the quality of these relationships on each of the following seven-point rating scales.

Relationships with other students

Friendly, Supportive, Sense of belonging ⑦ ⑥ ⑤ ④ ③ ② ① Competitive, Uninvolved, Sense of alienation

Relationships with administrative personnel and offices

Helpful, Considerate, Flexible ⑦ ⑥ ⑤ ④ ③ ② ① Rigid, Impersonal, Bound by regulations

Relationships with faculty members

Approachable, Helpful, Understanding, Encouraging ⑦ ⑥ ⑤ ④ ③ ② ① Remote, Discouraging, Unsympathetic

Go to next page

ESTIMATE OF GAINS

DIRECTIONS: In thinking about your college or university experience up to now, to what extent do you feel you have gained or made progress in the following areas? Indicate your response by filling in one of the ovals to the right of each statement.

	Very Little	Some	Quite a Bit	Very Much
Acquiring knowledge and skills applicable to a specific job or type of work (vocational preparation).	○	○	○	○
Acquiring background and specialization for further education in a professional, scientific, or scholarly field.	○	○	○	○
Gaining a broad general education about different fields of knowledge.	○	○	○	○
Gaining a range of information that may be relevant to a career.	○	○	○	○
Developing an understanding and enjoyment of art, music, and drama.	○	○	○	○
Broadening your acquaintance with and enjoyment of literature.	○	○	○	○
Seeing the importance of history for understanding the present as well as the past.	○	○	○	○
Gaining knowledge about other parts of the world and other people (Asia, Africa, South America, etc.).	○	○	○	○
Writing clearly and effectively.	○	○	○	○
Presenting ideas and information effectively when speaking to others.	○	○	○	○
Using computers and other information technologies.	○	○	○	○
Becoming aware of different philosophies, cultures, and ways of life.	○	○	○	○
Developing your own values and ethical standards.	○	○	○	○

	Very Little	Some	Quite a Bit	Very Much
Understanding yourself, your abilities, interests, and personality.	○	○	○	○
Developing the ability to get along with different kinds of people.	○	○	○	○
Developing the ability to function as a member of a team.	○	○	○	○
Developing good health habits and physical fitness.	○	○	○	○
Understanding the nature of science and experimentation.	○	○	○	○
Understanding new developments in science and technology.	○	○	○	○
Becoming aware of the consequences (benefits, hazards, dangers) of new applications of science and technology.	○	○	○	○
Thinking analytically and logically.	○	○	○	○
Analyzing quantitative problems (understanding probabilities, proportions, etc.).	○	○	○	○
Putting ideas together, seeing relationships, similarities, and differences between ideas.	○	○	○	○
Learning on your own, pursuing ideas, and finding information you need.	○	○	○	○
Learning to adapt to change (new technologies, different jobs or personal circumstances, etc.)	○	○	○	○

ADDITIONAL QUESTIONS

1. Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ	8. Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ	15. Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ
2. Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ	9. Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ	16. Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ
3. Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ	10. Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ	17. Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ
4. Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ	11. Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ	18. Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ
5. Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ	12. Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ	19. Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ
6. Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ	13. Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ	20. Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ
7. Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ	14. Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ	

OTHER ID#, If Requested

THANK YOU FOR YOUR PARTICIPATION!

PLEASE DO NOT WRITE IN THIS AREA

602808

■■ ■ 8

Additional Questions Added to CSEQ

1. Please indicate your current place of residence :

____Augustine Hall ___Guinan Hall
___On campus Apartment ____Off campus Residence (house, apartment, etc)

2. Please indicate your composite SAT I or ACT score that you used to gain admission to UST?_____

3. Please Indicate your High School Grade Point Average (select appropriate GPA scale)

_____/4.00 scale or _____/5.00 scale

4. Please indicate your approximate household income

____ Less than $40,000
____ $40,000 to 60,000
____ $ 60,000 to 80,000
____ $80.000 to $100,000
____ $100,000 to $120,000
____ Greater than $120,000
____Unknown

5. Do you plan to enroll in UST during the Fall 2005 semester Yes__ N0__

APPENDIX D QUALITATIVE INTERVIEW QUESTIONS

I. Introduction

My name is Doug Garrard. I am a doctoral candidate at the University of Texas at Austin and I am studying how students are affected by their college experience. I appreciate your participation in this interview.

As a reminder, your participation is voluntary and you may choose to not answer any of the questions that I pose. Our discussion will be tape recorded so that I can review our conversation at a later point in time. Again, your responses will be completely confidential and nothing you say will be attributed to you personally.

There are no right or wrong answers to the questions that I will ask. I am looking for your experiences at UST.

I. Living Arrangement

Why did you select to live in your current place of residence? (conventional residence hall, living- learning community, off –campus)

How do you think your experience differs from students who live (in a conventional residence hall, living-learning center, or off campus) ?

II. Academic Experiences

What would you say has been the academic highlight of your first year at the University of St. Thomas (UST)?

What would you say has been the academic low point of your first year at UST?

What have you thought about the courses that you have taken this year?

When you study for your classes do you usually study alone or with a group?

Do you think that you have met your academic potential?

III. Extracurricular/Social Experiences

Other than academic related activities, what has occupied your time this past year?

Have you become involved in student organizations or clubs?

How did you get involved in these activities?

Are you more active in clubs and organizations in college than you were in high school?

How has your involvement influenced your experience this year?

IV. Overall Satisfaction

Overall, what has been the best thing about your first year?

What has been the worst thing about your first year?

If you could change one thing about UST, what would it be?

If you could go back in time and make your "college choice" decision again, would you choose UST?

Do you plan to return next year?

On a scale of 1 to 10, with 1 being the least satisfying and 10 being the most satisfying, please rate your overall experience at UST. _____

V. Closing

Is there anything else that you would like to share about your first year experience at UST.

Thank you for your time. I greatly appreciate your help.

Bibliography

American College Personnel Association. (1994). The Student Learning Imperative: Implications for Student Affairs. Washington D.C.: American College Personnel Association.

American College Personnel Association and National Association of Student Personnel Administrators. (1997). Good Practices in Student Affairs. A joint resolution of Good Practices presented at the March 1997 ACPA/NASPA Conference. [On-line] Available: http://www.acpa.nche.edu/pgp/principle.htm

American Psychological Association (1985). Standards for Educational and Psychological Testing. Washington DC: Author, in Pedhazur, E., and Schmelkin, L. (1991) Measurement, Design and Analysis: An Integrated Approach. Hillsdale, NJ: Lawrence Erlbaum Associates, Publishers. P. 82

Astin, A. (1973). Impact of Dormitory Living on Students. Educational Record, 54, 3, 204-210.

Astin, A. (1977). Four Critical Years: Effects of college on beliefs, attitudes, and knowledge. San Francisco: Jossey Bass.

Astin, A. (1984). A Developmental Theory for Higher Education. Journal of College Student Personnel, 25, 4, 297-308.

Astin, A. (1985). Achieving Educational Excellence. San Francisco: Jossey-Bass.

Astin, A. (1993) What Matters in College: Four Critical Years Revisited. San Francisco: Jossey-Bass

Astin, A. (1996). Involvement in learning revisited: Lessons we have learned. Journal of College Student Development, 37, 2, 123-134

Anaya, G. (1999). College Impact on Student Learning: Comparing the Use of Self-Reported Gains, Standardized Test Scores and College Grades. Research in Higher Education, 40, 5, 499-526.

Baird, L. (1990). The Undergraduate Experience: Commonalities and Differences among Colleges. Research in Higher Education, 31, 3, 271-278.

Bauer, K, and Liang, Q. (2003). The Effects of Personality and Pre-College Characteristics on First-Year Activities and Academic Performance. Journal of College Student Development, 44, 3, 277-290.

Baxter Magolda, M. (1987). The Affective Dimension of Learning: Faculty-Student Relationships that Enhance Intellectual Development. College Student Journal, 21, 46-58.

Becker, L. (1998). Measures of Effect Size. [On-line] Available: http://web.uccs.edu/lbecker/SPSS/glm_effectsize.htm#Partial%20Eta%20squared,%20hp2. Retrieved May 13, 2006.

Blimling, G. (1988). The Influence of College Residence Halls on Students: A Meta-Analysis of the Empirical Research, 1966-1985." Unpublished doctoral disseration, Ohio State University. In R. Winston, Anchors, S. and Associates, (Eds.), Student Housing and Residential Life. Jossey Bass: San Francisco

Blimling, G. (1998). The Benefits and Limitations of Residential Colleges: A Meta-Analysis. (pp. 39-76) In Alexander, F. K. and Robertson, D. E (Eds.), Residential Colleges: Reforming American Higher Education (1998) The Oxford International Round Table.

Borden, V. (2001). Measuring Quality: Choosing Among Surveys and Other Assessments of College Quality. Washington, DC: American Council on Education. In R. Gonyea et al. (Eds.), College Student Experiences Questionnaire: Norms for the Fourth Edition.

Boyer, E. (1987). College: The undergraduate experience in Amercia. The Carnegie Foundation for Advancement of Teaching. New York: Harper and Row.

Brannic, M. (2000). Logistic Regression. [On-line] Available: http://luna.cas.usf.edu/~mbrannic/files/regression/Logistic.html Retrieved June 2, 2006.

Brown, R. (1974). Student Development and Residence Education: Should It Be Social Engineering? In D. DeCoster and P. and Mable, (Eds.), Student Development and Education in College Residence Halls.

Brown, R. (1985). Review of College Student Experiences. In Mitchell, J. V. (ed), The Ninth Mental Measurements Yearbook: Volume I. The Buros Institute of Mental Measurements. The University of Nebraska Press: Lincoln, NE

Brown, S. (2004). Learning Across the Campus: How College Facilitates the Development of Wisdom. Journal of College Student Development, 45, 2, 134-148.

Brower, A., and Dettinger, K. (1998). What is a Learning Community? About Campus, November/December, 15-21.

Butler, D., and Campbell, J. (2003). The RA Position: Tapping the Power. The Journal of College and University Student Housing, 32, 2, 4-10.

Cassell, C., and Symon, G. (Eds.). (1994). Qualitative Methods in Organizational Research. Thousand Oaks: Sage Publications.

Centra, J. (1968). Student Perceptions of Residence Hall Environments: Living Learning Versus Conventional Units. Journal of College Student Personnel, 9, 4, 266-272.

Chickering, A. W. (1969). Education and Identity. San Francisco: Jossey-Bass

Chickering, A. (1974). Commuting versus resident students. San Francisco: Jossey Bass

Chickering, A.W. and Gamson, Z. F. (1987). Seven Principles for Good Practice in Undergraduate Education. Washington Center News. March 1987 AAHE Bulletin. [On-line] Available at: Http://learningcommons.evergreen.edu/pdf/fall1987.pdf

Chickering, A. and Reisser, L. (1993). Education and Identity (2nd ed.). San Francisco: Jossey-Bass

Clark, J. H., Miser, K. M. and Roberts, A. O. (1988). Freshman Residential Programs: Effects of Living Learning Structure , Faculty Involvement, and Thematic Purpose. Journal of College and University Student Housing,18, 2, 7-13.

Cokley, K. (2000). Perceived Faculty Encouragement and its influence on college students. Journal of College Student Development, 41, 3, 348-352.

Cohen, J. (1969). Statistical Power Analysis for the Behavioral Sciences. New York: Academic Press.

Cohen, J. (1988). Statistical Power Analysis for the Behavioral Sciences, 2nd Edition. New Jersey: Lawrence Erlbaum Associates.

Cook, C, Heath, F. and Thompson, R. (2000). A Meta-Analysis of Response Rates in Web or Internet-based Surveys. Educational and Psychological Measurement, 60, 821-836. In S. J. Thomas, Using Web and Paper Questionnaires for Data-Based Decision Making. Thousand Oaks, CA: Corwin Press.

Cowley, W. H. (1949). Some History and a Venture in Prophecy. In E. G. Williamson, (Ed.), Trends in Student Personnel Work (pp. 12-26). Minneapolis: The University of Minnesota Press.

Dammen, A H. (1949). Residence Halls for Students. In E. G. Williamson, (Ed.), Trends in Student Personnel Work (pp. 252-259). Minneapolis: The University of Minnesota Press.

DeCoster, D. (1968). Effects of Homogenous Housing Assignments for High Ability Students. The Journal of College Student Personnel, 9, 2, 75-78.

DeCoster, D. (1989). Review of the College Student Experiences Questionnaire. In Conoley, J and Kramer, J., (Eds.), The Tenth Mental Measurements Yearbook. The Buros Institute of Mental Measurements. The University of Nebraska Press: Lincoln, NE

DeCoster, D. and Mable, P. (1980). Personal Education and Community Development in College Residence Halls. Cincinnatti: American College Personnel Association.

Demakis, G. and McAdams, D. P. (1994). Personality, Social Support and Well-Being Among First Year College Students. College Student Journal, 28, 2, 325-43.

DeMaris, A. (2004). Regression with Social Data: Modeling Continuous and Limited Response Variables. New Jersey: John Wiley and Sons, Inc.

de Vaus, D. (2001). Research in Social Design. Thousand Oaks: Sage Publications.

Dillman, D. (2000). Mail and Internet Surveys: The Tailored Design Method. 2nd Edition. New York: John Wiley and Sons, Inc.

Dwyer, J. (1989). A Historical Look at the Freshman Year Experience. In M. Upcraft, J. Gardner and Associates (Eds.), The Freshman Year Experience: Helping Students to Succeed in College. San Francisco: Jossey-Bass.

Fact Book (2004/05). University of St. Thomas Fact Book 2004-2005. [On-line] Available: http://www.stthom.edu/spire/html/fact_book.html

Fenske, R. (1980). Historical Foundations. In U. Delworth, G. R. Hanson and Associates, Student Services: A Handbook for the Profession. Jossey-Bass Publishers: San Francisco. Pp. 3-24.

Gardner, J. (1986). The Freshman Year Experience. College and University, 61, (4), 261-274.

Gabelnick, F., MacGregor, J., Matthews, R. and Smith, B. (Eds.). (1990). Learning Communities: Creating Connections Among Students. Faculty. and Disciplines. New Directions for Teaching and Learning, 41. San Francisco: Jossey-Bass

Garavalia, L., & Gredler, M. (2002). Prior Achievement, Aptitude, and Use of Learning Strategies as Predictors of College Student Achievement. College Student Journal, 36, 4, 616-625

Garson, G. (2006a). Logistic Regression. [On-line] Available: http://www2.chass.ncsu.edu/garson/PA765/logistic.htm. Retrieved April 29, 2006.

Garson, G. (2006b). Multiple Regression. [On-line] Available: http://www2.chass.ncsu.edu/garson/PA765/regress.htm. Retrieved April 29, 2006

Garson, G. (2006c). Structural Equation Modeling. [On-line] Available: http://www2.chass.ncsu.edu/garson/pa756/structur/htm. Retrieved April 29, 2006

Garson, G. (2006d). Validity. [On-line] Available: http://www2.chass.ncsu.edu/garson/pa765/validity.htm. Retrieved June 26, 2006

Garson, G. (2006e). GLM: Manova and Mancova. [On-line] Available http://www2.chass.ncsu.edu/garson/PA765/manova.htm. Retrieved June 26, 2006

George, D. and Mallery, P. (2006). SPSS for Windows Step by Step: A Simple Guide and Reference. Sixth Edition. Boston: Pearson Education, Inc.

Gonyea, R., Kish, K., Kuh, G., Muthiah, R., and.Thomas, A. (2003). College Student Experiences Questionnaire: Norms for the Fourth Edition. Bloomington, IN: Indiana University Center for Postsecondary Research and Planning.

Gorsuch, R. (1983). Factor Analysis. In J. Stevens, Applied Multivariate Statistics for the Social Sciences. Hillsdale, NJ: Lawrence Erlbaum Associates, Publishers

Gravetter, F., and Wallnau, L. (1999). Statistics for the Behavioral Sciences. Wadsworth Publishing, Edition 5.

Greer, B., and Mulhern, G. (2002). Making Sense of Data and Statistics in Psychology. Great Britain: Antony Rowe Ltd.

Guertin, W. H. and Bailey, J. P. (1970). Introduction to Modern Factor Analysis. Ann Arbor, MI: Edwards Brothers, Inc.

Hardy, M. (1993). Regression with Dummy Variables. Newbury Park, CA: Sage Publications.

Henry, K.B., and Schein, H. K. (1998) Academic Community in Residence Halls Residence Halls: What differentiates a Hall with a Living /Learning Program? The Journal of College and University Student Housing. 27, 2, p9-13

Hu, S. and Kuh, G. D. (2003) Maximizing What Students Get Out of College: Testing a Learning Productivity Model. Journal of College Student Development, 44, 2, 185-203.

James, P. and Klippenstein, S. (2002) A review of Past and Current Connections. The Residential Nexus: A focus on Student Learning. [On-line] Available: Http://www.acuho.ohio-state.edu/pdf/ResidentialNexus02.pdf Retrieved March 2003.

Kaplan, M. (1982). The Wrong Solution to the Right Problem. In J. Hall and B. Kevles (Eds.), In Opposition to the Core Curriculum: Alternative Models for Undergraduate Education. (pp. 3-12). Westport, Connecticut: Greenwood Press.

King, N. (1994). The Qualitative Research Interview, pp. 14-36. In C. Cassell and G Symon, (Eds)., Qualitative Methods in Organizational Research. Thousand Oaks: Sage Publications.

Korth, B. (1975) Rotations in Exploratory Factor Analysis. In D. Amick and H. Walberg (Eds.), Introductory Multivariate Analysis. (pp. 147-169). Berkeley, CA: McCutchan Publishing Corp.

Kruck, S. and Lending, D. (2003). Predicting Academic Performance in an Introductory College-Level IS course. Information, Technology, Learning and Performance Journal, 21, 2

Kuh, G. (1995). The Other Curriculum: Out-of-Class experiences Associated with Student Learning and Personal Development. Journal of Higher Education Education, 66, 123-155.

Kuh, G. (1996). Guiding principles for Creating Seamless Learning Environments for Undergraduate. Journal of College Student Development, 37, 2, 135-148.

Kuh, G., Schuh, J., Whitt, E., and Associates. (1991) Involving Colleges. San Francisco: Jossey-Bass.

Kuh, G., Vesper, N., Connolly, M., and Pace, C. (1997) College Student Experiences Questionnaire: Revised Norms for the Third Edition. Bloomington, IN: Center for Postsecondary Research and Planning, Indiana University.

Kuh, G., Pace, C., and Vesper, N. (1997). The Development of Process Indicators to Estimate Student Gains Associated With Good Educational Practices in Undergraduate Education. Research in Higher Education, 38, 4, 435-454.

Kupermintz, H. (1996). The Bell Curve: Corrected for Skew. Education Policy Analysis Archives 4, 20. [On-line] Available: Http://epaa.asu.edu/epaa/v4n20.html Retrieved May 20, 2006.

Laing, J., Sawyer, R., and Noble, J. (1988). Accuracy of Self-Reported Activities and Accomplishments of College Bound Students. Journal of College Student Development, 29, (4), pp. 362-368.

Lahmers, A. and Zulauf, C. (2000). Factors Associated with Academic Time Use and Academic Performance of College Students: A recursive approach. Journal of College Student Development, 41, 5, 544-554.

Learning Pyramid. (1996) Motorola University: Creating Mindware for the 21st Century. Corporate University Xchange 2, 3. [on-line] Available: http://www.simulations.co.uk/pyramid.htm

Lenning, O., and Ebbers, L. (1999). The Powerful Potential of Learning Communities: Improving Education for the Future. ASHE-ERIC Higher Education Report, 26, 6

Levine, J., and Shapiro, N. (2000). Curricular Learning Communities. In B. Jacoby (Ed.), Involving Commuter Students in Learning. New Directions for Higher Education, 109. San Francisco: Jossey-Bass.

Lewin, K. (1936). Principles of Topological Psychology. (F. Heidner and G. M. Heider, trans.) New York: McGraw-Hill.

Lomax, R. G. (2001) An Introduction to Statistical Concepts for Educational and Behavioral Sciences. New Jersey: Lawrence Erlbaum Associates

Lunberg, C. and Schreiner, L. (2004). Quality and Frequency of Faculty-Student Interaction as Predictors of Learning: An Analysis by Student Race/Ethnicity. Journal of College Student Development, 45, 5, 549-565.

Magnarella, P. (1979) The Continuing Evaluation of a Living-Learning Center. Journal of College Student Personnel, 20,4, pp. 4-8.

McGrath, P., Guiterrez, P., and Valadez, I. (2000). Introduction of the College Student Social Support Scale: Factor Structure and Reliability Assessment. Journal of College Student Development, 41, 4, 415-426.

Michelson, W. (1970). Man and His Urban Environment: A Sociological Approach. Reading Mass: Addison-Wesley. In R. Winston, Anchors, S. and Associates, (Eds.), Student Housing and Residential Life. San Francisco: Jossey Bass

Minke, A. (1997). Conducting Repeated Measures Analyses: Experimental Design Considerations. Paper presented at the annual meeting of the Southwest Educational Research Association, Austin, January, 1997 [On-line] Available: http://ericae.net/ft/tamu/Rm.HTM

Moos, R. (1974). The Social Climate Scales: An Overview. Palo Alto, CA: Consulting Psychologists Press. In Student Housing and Residential Life: a Handbook for Professionals Committed to Student Development Goals. San Francisco: Jossey-Bass.

Moos, R. (1979). Evaluating educational Environments. San Francisco: Jossey Bass.

Moos, R., and Gerst, M. (1974). Manual for The University Residence Environment Scale. Palo Alto: Consulting Psychologists Press.

Murray, H. (1938). Exploration in Personality. New York: Oxford University Press.

National Commission on Excellence in Education. (1983). A Nation at Risk: The Importance for Educational Reform. Washington, D.C.: United States Government Printing Office.

National Association of Student Personnel Administrators (1989). Points of View: A perspective on Student Affairs, 1987; The Student Personnel point of View, 1949; and, The Student Personnel Point of View, 1937. Washington, D.C.: National Association of Student Personnel Administrators, Inc.

Nunnally, J. (1978). Psychometric Theory. New York: McGraw-Hill.

Ouimet, J., Kuh, G., Smallwood, R., and Springer, R. (2001). National Survey of Student Engagement. Presented at the American Association of Higher Education Assessment Forum, June 23, 2001. Denver, Colorado.

Pace, C. (1979). Measuring outcomes of college: fifty years of findings and recommendations for future assessment. San Francisco: Jossey-Bass

Pace, C. (1980). Measuring the Quality of Student Effort. In Current Issues in Higher Education, Number 1, Improving Teaching and Institutional Quality. Washington D.C.: American Association for Higher Education

Pace, C. (1984). Measuring the Quality of College Student Experiences: An Account of the Development and Use of the College Student Experiences Questionnaire. Los Angeles: Higher Education Research Institute

Pascarella, E. (1980). Student-Faculty Informal Contact and College Outcomes. Review of Educational Research, 50, 545-595.

Pascarella, E. (1985a). The Influence of On-Campus Living Versus Commuting to College on Intellectual and Interpersonal Self-Concept. Journal of College Student Personnel, 26, (4), 292-299.

Pascarella, E. (1985b). College Environmental Influences on Learning and Cognitive Development: A critical Review and Synthesis. In John C. Smart, (Ed.), Higher Education: Handbook of Theory and Research. Volume I. (pp. 1-61) New York: Agathon Press

Pascarella, E., Bohr, L., Nora, A., Zusman, B., Inman, P. and Desler, M. (1993). Cognitive impacts of living on campus versus commuting to college. Journal of College Student Development, 34, 3, 216-220.

Pascarella, E., and Terenzini, P. (1981). Residence Arrangement, Student/Faculty Relationships, and Freshman-Year Educational Outcomes. Journal of College Student Personnel 22, 2, 147-155

Pascarella, E., and Terenzini, P. (1991). How College Affects Students. San Francisco: Jossey-Bass

Pascarella, E. , Terenzini, P., and Blimling, G. (1994). The Impact of Residential Life on Students. In Schroeder, Mable and Associates (eds.) Realizing the Educational Potential of Residence Halls. San Francisco: Jossey Bass

Pascarella, E., Wolniak, G., Cruce, T., and Blaich, C. (2004). Do Liberal Arts Colleges Really Foster Good Practices in Undergraduate Education? Journal of College Student Development, 45, 1, 57-74.

Pedhazur, E., and Schmelkin, L. (1991). Measurement, Design, and Analysis: An Integrated Approach. Hillsdale, N.J.: Lawrence Erlbaum Associates

Pemberton, C. (1969). An Evaluation of a Living-Learning Residence Hall Program. Unpublished Manscript.

Peng, C., Lee, K., and Ingersoll, G. (2002) An Introduction to Logistic Regression Analysis and Reporting. The Journal of Educational Research, 96, 1, 3-14.

Pike, G. (1990). Assessment Update: Progress, Trends, and Practices in Higher Education, Assessment Measures *2*,1, 8-9.

Pike, G. (1995). The Relationship Between Self Reports of College Experiences and Achievement Test Scores. Research in Higher Education, 36, 1, 1-22. In G. Kuh, N. Vesper, M. Connolly, and C. Pace, College Student Experiences Questionnaire: Revised Norms for the Third Edition. Bloomington, IN: Center for Postsecondary Research and Planning, Indiana University.

Pike, G. (1996). Limitations of Using Students' Self-Reports of Academic Development as Proxies for Traditional Achievement Measures. Research in Higher Education, 37, (1), pp. 89-114.

Pike, G. (1999). The Constant Error of the Halo in Educational Outcomes Research. Research In higher Education, 40, 1 61-86.

Ramanoff, S. (2000). The Learning Community Laboratory: A Context for Discovery. Journal of College Student Development, 41, (2), pp. 245-247

Rest, J., and Deemer, D. (1986) Life Experiences and Developmental Pathways. In J.R. Rest (Ed.), Moral Development: Advances in Research and Theory. New York: Praeger Press.

Riker, H. (1965). College Housing as Learning Centers. The American College Personnel Association in Cooperation with The Association of College and University Housing Officers. Student Personnel Series No. 3. Washington, D. C.: ACPA

Rubin, (1973). Matching to remove Bias in Observational Studies. From Anderson et al (Eds (1980),. Statistical Methods for Comparative Studies: Techniques for Bias Reduction. New York: John Wiley and

Rudolph, F. (1962) The American College and University: A History. Knopf: New York

Saddlemire, G. (1980). Professional Developments. In U. Delworth, G. R. Hanson and Associates, Student Services: A Handbook for the Profession. Jossey-Bass Publishers: San Francisco. Pp. 25-44

Schmidt, J., and Holtgreive, S. (1997). Collaboration: Yesterday, Today, and the New Millennium. The Journal of College and University Student Housing, 27, (1), pp. 7-9.

Schroeder, C., Mable, P., and Associates (1994). Realizing the Educational Potential of Residence Halls. San Francisco: Jossey Bass

Schroeder, C., and Mable, P. (1994). Residence Halls and The College Experience: Past and Present. PP3-21. In Schroder, Mable and Associates (eds.) Realizing the Educational Potential of Residence Halls. San Francisco: Jossey Bass.

Shay, J. (1964). The Evolution of the Campus Residence Hall. Part I: The Decline. Journal of the National Association of Women Deans and Counselors. 27

Shushok, F. (2002). "Educating the Best and the Brightest: Collegiate Honors Programs and the Intellectual, Social and Psychological Development of Student. Unpublished doctoral dissertation, University of Maryland, College Park.

Smith, B. (2001). The Challenge of Learning Communities as a Growing National Movement. Association of American Colleges and Universities. AAC&U Publications. Peer Review, 3, 4 [on-line] Available: Http://learningcommons.evergreen.edu/pdf/PeerReview2001.pdf Retrieved 4/17/2003.

Smith, T. (1994). Integrated Living and Learning in Residential Colleges. Pp. 241-265. In Schroder, Mable and Associates (eds.) Realizing the Educational Potential of Residence Halls. San Francisco: Jossey Bass

Stevens, J. (1986). Applied Multivariate Statistics for the Social Sciences. Hillsdale, NJ: Lawrence Erlbaum Associates, Publishers

Strange, C., and Banning, J. (2001). Educating by Design: Creating Campus Learning Environments that Work. San Francisco: Jossey Bass.

Study Group on the Conditions of Excellence of Higher Education. (1984). Involvement in Learning: Realizing the Potential of American higher Education. Washington, D.C.: National Institute on Education.

Tabachnick, B., and Fidell, L. (1983). Using Multivariate Statistics. New York: Harper and Row.

Texas Transport Institute (2005). 2005 Urban Mobility Study. [On-line] Available: http://mobility.tamu.edu/ums/congestion_data/tables/national/table_2.pdf

Terenzini, P., Pascarella, E., and Blimling, G. (1996). Students' Out-of-Class Experiences and Their Influence on Learning and Cognitive Development: A literature Review. Journal of College Student Development, 37, 2, pp. 149-162.

Terenzini, P., and Pascarella, E. (1994). Living with Myths: Undergraduate Education in America. Change, 25, (6), pp. 28-32. In Schroder, Mable and Associates (eds.) Realizing the Educational Potential of Residence Halls. San Francisco: Jossey Bass

Terenzini, P., Springer, L., Pascarella, E., and Nora, A. (1995). Academic and Out-of-Class Influences on Student' Intellectual Orientations. The Review of Higher Education, 19, 2, 23-44.

Tinto, V. (1985). Dropping Out and Other Forms of Withdrawal from College. In L. Noel, R. Levitz, and D. Saluri, (Eds.), (1985). Increasing Student Retention. San Francisco: Jossey-Bass

Tinto, V. (1997). Classrooms as Communities: Exploring the Educational Character of Student Persistence. The Journal of Higher Education 68, pp. 599-623.

Tinto, V. (1998). Colleges as Communities: Taking Research on Student Persistence Seriously. The Review of Higher Education, 21, 2, 167-177

Tinto, V., and Goodsell, A. (1994). Freshman Interest Groups and the First-Year Experience: Constructing Student Communities in a Large University. Journal of The Freshman Year Experience, 6, 1, pp. 7-28.

Twale, D., and Sanders, C. (1999). Impact of Non-Classroom Experiences on Critical Thinking Ability. NASPA Journal, 36, 2 133-146.

Umbach, P., and Wawrzynski, M. (2004). Faculty do matter: The role of college faculty in student learning and engagement. Paper presented at the Forum of the Association for Institutional Research, Boston, MA. [On-line] Available: http://www.indiana.edu/~nsse/html/research.htm

Upcraft, M., and Pilato, G. (1982). Residence Hall Assistants in College. San Francisco: Jossey-Bass

Upcraft, M., Finney, J., and Garland, P. (1984). Orientation: A Context. In M Upcraft, (ed.), Orienting Students to College. New Directions for Student Services, 25. San Francisco: Jossey-Bass

Upcraft, M., Gardner, J., and Associates. (1989). The Freshman Year Experience: Helping Students to Succeed in College. San Francisco: Jossey-Bass

Western Interstate Commission for Higher Education. (1973). The Ecosystem Model: Designing Campus Environments. In J. Schuh and M. Upcraft, (Eds.), Assessment Practice in Student Affairs. San Francisco: Jossey Bass

Wingspread Group on Higher Education. (1993). An American Imperative: Higher Expectations for Higher Education. Racine, WI: The Johnson Foundation

Winston, R., and Anchors, S. (1993). "Student Development in the Residential Environment." In R.B. Winston and S. Anchors (eds.), Student Housing and Residential Life: a Handbook for Professionals Committed to Student Development Goals. San Francisco: Jossey-Bass.

Zekeri, A. (2004). College Curriculum: Competencies and Skills Former Students Found Essential to Their Careers. College Student Journal, 38, 3, 412-422.

Zeller, W. (1991). Future trends of the Student Housing Profession. The Journal of College and University Student Housing. 21, (2), pp. 21-24.

Zeller, W. (1996). Two Cultures United: Residential Programs of the 21st Century. The Journal of College and University Student Housing. 26, (2), pp. 7-13.

Zeller, W. (2003). The Student Learning Imperative: Implications for Student Affairs Professionals. [On-Line] Available: http://www.studentaffairs.com/onlinecourses/spring2003course8.html Retrieved March 2003.

Vita

Douglas Charles Garrard was born in Chicago, Illinois to Charles and Barbara Garrard. After graduation from Glenbard North High School in Carol Stream, Illinois, he entered Southern Illinois University at Carbondale in 1979. Majoring in agriculture, he received a Bachelor of Science degree in 1983.

He worked at Southwestern University in Georgetown, Texas as a Hall Director/Assistant Director of Residence Life before accepting a position at the University of Texas in 1989, where he worked as Coordinator of Residence Life. In 1991 he began studying for a Masters degree, receiving his Master of Education degree in College and University Student Personnel Administration in 1993. The following year he was promoted to Assistant Director of Residence Life, and is currently employed as Associate Director of Residence Life/Organizational Development and Diversity at the Division of Housing and Food Service. In 1996 he entered graduate school at the University of Texas to pursue a doctorate in Higher Educational Administration.

Permanent Address: 302 Water Oak Drive, Cedar Park, Texas. 78613

This dissertation was typed by the author.